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ORIGINAL ARTICLES

THE DILUTION AND CONCENTRATION TESTS OF RENAL FUNCTION

BY JOSEPH H. PRATT, M.D.

A FUNCTIONAL diagnosis of kidney disease is fully as important as an anatomical diagnosis and it can be made with more certainty. In treatment a knowledge of existing disturbance in function is of even greater value than a knowledge of the anatomical lesion. Just as in heart disease it is more significant to know that a patient cannot walk up stairs without shortness of breath than to know whether a valve as well as the myocardium or the heart muscle alone is diseased, so in kidney disease it is more important to know that a patient cannot excrete nitrogen normally than to know whether he has a glomerulonephritis or a contracted kidney.

Functional tests of kidney function have come into general use. Those chiefly employed in this country are the sulphonephthalien test of Rowntree and Geraghty[1] and the test diet of Hedinger and Schlayer[2], in the modified form introduced by Mosenthal[3]. These diagnostic procedures are valuable but they do not furnish all the information of kidney function that can be readily gained from the dilution and concentration tests. But little reference to these tests is to be found in English. They seem to be rarely used even by those chiefly interested in the study of kidney disease in America. Mosenthal[4] in his monograph on metabolism in nephritis (1922) describes the tests, but apparently had had no personal experience with them. His statement that they cause discomfort for the patient has not been supported by my experience. These tests make such demands on the kidney that they bring out more nearly its maximum power to dilute the urine and to concentrate it than does the renal test diet of Hedinger and Schlayer. The dilution and concentration tests have other advantages over the renal test diet in that they reveal more clearly: (1) a failure to excrete water at a normal rate and in normal amounts; (2) an inability to put out concentrated solutions of nitrogen and salt; (3) extrarenal influences on the secretion of urine.

That the tests have certain advantages over his own is admitted by Schlayer[5] himself. He does insist, however, that his nephritic test diet will reveal some disturbances of function not brought out by the dilution and concentration tests and in this he is probably correct. Strauss[6], however, holds that Schlayer's test day shows nothing more regarding renal function than the dilution and concentration tests.

An important part of the foundation of the modern pathological physiology of kidney function rests on the work of v. Korányi[7], the Budapest clinician. He showed by his studies on the freezing point of the urine that in nephritis the ability of the kidney to secrete a concentrated urine is impaired. To this condition Korányi gave the term hyposthenuria. He found that as a rule the more severe the nephritis, the greater the loss of the concentrating power, and that in the advanced stage of nephritis the difference in the freezing point and hence in the molecular concentration between the blood and urine might disappear. This was an important discovery. It showed that the kidney thus crippled could secrete only a urine of the same concentration as that of the blood. The specific gravity of the blood freed from protein is about 1010 and in some cases of severe chronic interstitial nephritis it is well known that the specific gravity of the urine is fixed between 1010 and 1012. This condition in which the kidney is unable either to concentrate the urine or dilute it has been called isosthenuria by Volhard[8] and asthenuria by v. Korányi[9].

As early as 1900 an excellent paper was published by Kövesi and Roth-Schulz[10] from v. Korányi's clinic in which both dilution and concentration tests were described. A diluted urine was obtained by having the patient drink at one time 1.8 liters of mineral water (Salvatorwater). The power of the kidneys to produce a concentrated urine was tested by sweating the patient. In their study of the capacity of the kidney to secrete solid substances the method employed was the determination of the freezing point of the urine. Hanssen[11] of Bergen, Norway, a little later showed that the specific gravity in the cases he studied ran parallel with the freezing point, and he advocated the simple procedure of determining the specific gravity instead of the time consuming cryoscopy. Volhard[12], likewise, substituted specific gravity readings for freezing point determinations and subsequent investigators have followed him in this.

METHODS

To Volhard belongs the credit of calling attention to the practical value in diagnosis of the dilution and concentration tests. The method as modified by Strauss[6] is the one generally used today. This consists of uniting the two tests in a single procedure and thus limiting the time necessary for the combined test to a single day. For the dilution test Volhard[12] gave 1500 c.c. of fluid in the morning while Strauss[6] gave only 1000 c.c. The method I employ is largely composed of details selected from the procedures used by these two investigators. The patient urinates at exactly 7 A. M. and is given immediately 1000 c.c. of fluid, either water alone, or part tea and part water, as he prefers. This amount of fluid is all to be taken within five or ten minutes. At 7.30 or 8 A. M. he may have rolls, toast and an egg or any other dry food. At 8 A. M., exactly, the urine is to be voided, and again at 9 A. M. Thereafter urine is collected every two hours until 9 P. M. The urine voided between 9 P. M. and 7 A. M. the following day is collected in one portion. Relatively dry food is given at lunch and supper, usually potatoes, cheese, meat, eggs and toast. The patient is allowed to choose which of these he desires. If thirst became annoying a measured amount of water is given at 5 P. M. Usually, however, in the cases reported no fluid was taken until 7 P. M. or 9 P. M.

NORMAL RESPONSE TO DILUTION AND CONCENTRATION TESTS

If the reaction on the part of the kidneys is normal to this test a diluted urine is voided during the morning hours, and a concentrated urine during the remainder of the day.

Volhard[12] asserted that the specific gravity should drop to 1002-1004 and that the full amount of fluid taken be excreted in four hours. During the concentration test which he usually made on another day by giving the patient a dry diet the volume of urine would normally fall to 400 or 500 c.c. and the specific gravity rise to 1025-1030 or higher. These figures appear to have gained general acceptance as Friedrich Müller[13] states in the latest edition (1925) of v. Mering's Lehrbuch der inneren Medizin, that if a person in health takes 1 or 1.5 liters of water soon after awaking on a fasting stomach the specific gravity of the urine secreted will fall to a very low level (1001-1005) and the amount voided within four hours will equal or even exceed that drunken. During the remaining hours of the day the specific gravity should rise to above 1024.

Volhard, Munk[11] and Schlayer[5], allow the patient to take food as usual in the morning, which in Germany includes a second breakfast in the middle of the forenoon. Strauss[6] allows no food until 11 A. M.

Few results on persons with healthy kidneys have been reported. In a study from Strauss's clinic, Schön[15], reports observations on seven patients free from kidney disease, and I have found no other series even as large as this. Schön's patients received 1000 c.c. of water and fasted for four hours. The average output of fluid in the two hours was 597 c.c. and in four hours 1059 c.c. The maximum volume secreted in the four hours was 1314 c.c. and the minimum 875 c.c. The specific gravity in every case fell to 1004 or lower. During the concentration period it rose to at least 1029 and in two cases reached 1034. These results agree with the statements of Volhard and v. Müller and differ somewhat from my experience reported in the present paper.

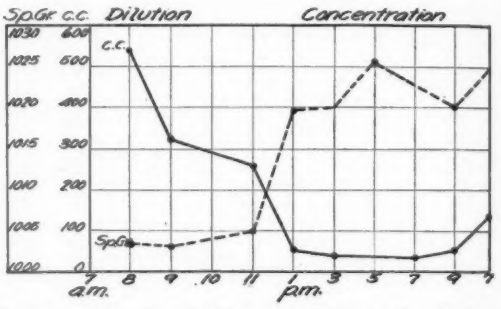


CHART I. Mrs. B. Dilution and Concentration Tests. Excessive output of urine in four hours. Normal kidneys. A liter of water was taken at 7 A. M. In the following four hours she voided 1130 c.c. The specific gravity fell to a minimum of 1003 at 9 A. M. At 1 P. M. the concentration of the urine had begun. At 5 P. M. the specific gravity had reached 1026.

It should be noted that the time intervals between the vertical lines in this and the other charts vary. The distance between two adjacent vertical lines represents one hour up to 11 A. M., and from that time onward two hours up to 9 P. M. The last single space represents the time from 9 P. M. to 7 A. M., an interval of ten hours.

It seemed desirable to secure more information on normal persons and to perform the tests also on patients with other diseases than those of the kidneys, especially in cases of slight cardiac insufficiency. I have analyzed the results obtained on 58 cases. The series included only eight cases of nephritis. Thirteen of the patients had heart disease with and without cardiac insufficiency. Twenty-six were psychoneurotic patients with healthy hearts and kidneys. These presented a favorable opportunity to study the effect of extra-renal factors, especially the influence of the water content of the organism on the outcome of the dilution and concentration tests. In addition there were four cases of primary hypertonia, three of arteriosclerosis not involving the heart or kidneys clinically, one of secondary anaemia, one of obesity, one of exophthalmic goitre, and one case of hypertrophied prostate. Most of the tests were made on patients in the New England Baptist Hospital. Five cases were studied by Dr. W. R. Ohler in the wards of Dr. Peabody's clinic at the Boston City Hospital and to him my thanks are due for permission to include his observations.

The details of a normal response to the water test are shown in Table I. The patient was

given 1000 c.c. at 7 A. M. In the following four hours she voided 1030 c.c. of urine and the specific gravity fell to 1003.

TABLE I

Time	Urine— c.c.	Sp. Gr.	Mrs. M.
8 A. M.	90	1015	Intake 7 A. M. 1000 c.c.
9	370	1003	Intake 8.35 P. M. 130 c.c.
11	570	1003	Total intake 1130 c.c.
1 P. M.	215	1010	Total output 1675 c.c.
3	110	1014	Output in first four hours.
5	40	1027	1030 c.c.
7	50	1020	Maximum specific gravity 1027.
9-7 A. M.	140	1024	Minimum specific gravity 1003.

The reaction of another person with normal kidneys is shown graphically in Chart I.

The dilution test in 22 mild psychoneurotic cases with normal kidneys and hearts yielded results which can be regarded as the response of healthy kidneys to the ingestion of 1000 c.c. of water. All but three of the patients were kept in bed during the test. The average output of water during the first four hours was 888 c.c. The amount excreted by the individual patients varied within wide limits. The minimum output was 219 c.c. and the maximum 1596 c.c. In a majority of the cases, that is in 12 out of the 22, the diureses during the period of four hours exceeded 1000 c.c., the amount of water ingested. Hence in these cases, the effect of drinking a large amount of water was actually a water loss to the body. With the water a varying amount of nitrogen, sodium chloride and other solids was swept out of the body. In 15 of the tests the specific gravity fell to 1005 or less, in the remaining seven it ranged from 1007 to 1013. In two of the tests in which there was an excessive output of water the specific gravity fell only to 1007 or 1008. As the kidneys were healthy this was not due to an inability of the kidneys to dilute further the urine, but to an unusual amount of solid substances excreted during the diuresis.

The widely varying results obtained in these different individuals are to be attributed partly to constitutional peculiarities, partly to the state of the entire salt and water content of the organism at the particular time the test was made, and partly to psychic influences acting on the kidneys during the period of observation.

The intake of water and salt in the days immediately preceding the test and the reserves of water and salt in the tissues influence greatly the water excretion in the dilution test. (Siebeck[16].) That extra-renal factors may affect the results obtained by the renal function meals of Schlayer and Mosenthal was shown by Lyle and Sharlit[17]. They determined the renal function by test meals on healthy persons five days in succession. The total fluid output fell steadily from day to day in spite of food and fluid intake remaining the same. They regard this as the expression of "an effort on the part of the body to prevent depletion of its fluids in order to keep constant the concentration of its solids."

In the course of making the present study the great importance of extra-renal influences became more and more apparent. These should always be eliminated as much as possible before concluding that the failure in dilution or concentration is due to a defect in the function of the kidney. Failure to void a urine of low specific gravity and failure to void the usual amount of fluid in the first four hours is often due to partial dehydration of the tissues. If this explanation is probable the patient should take 2000 c.c. of fluid in addition to the regular diet for two or three days and then the test be repeated. If the oliguria with lack of dilution was due to dehydration the response to this second test will either be normal or show an approach to the normal. On the other hand if there is a failure to concentrate as shown by too low a maximum specific gravity the cause may be a latent oedema or simply an excess of fluid in the tissues which may be purely physiological. For example, the urine of a patient in this series showed a maximum specific gravity in the concentration test of only 1020, instead of the normal 1025. The heart and kidneys were apparently healthy. The case was a simple psychoneurosis. That the maximum concentrating power of the kidneys was not impaired was shown by subjecting her to a more rigid concentration test. No fluid was taken after noon one day until the following day at 11 a. m. Dry food was eaten at supper and breakfast. She voided at 9 a. m. the following day urine with a specific gravity of 1032, thus showing the kidneys could concentrate solids normally. During the test she suffered no discomfort from thirst.

GREATLY DIMINISHED OUTPUT OF URINE IN THE DILUTION TEST

In the whole series of tests on 58 patients with healthy and diseased kidneys there were nine tests on nine different persons in which the output in four hours was less than 250 c.c. Two of these were practically healthy men who showed only mild neurasthenic symptoms. They were up and about when the test was performed. The lungs and skin takes precedence over the kidneys in their demands on the organism for water. The amount of water ordinarily eliminited through skin, lungs and intestines under normal conditions is between 700 and 1000 grams in twenty-four hours[18], [19]. As water loss through skin and lungs is increased by muscular activity and "exposure to atmospheric temperature and relative humidity most favorable to water evaporation" (Lyle and Sharlit), the importance of keeping the patient in bed during the test is apparent

Three of the patients had cardiac insufficiency. One of these excreted only 86 c.c. of urine during the four hour period. He had chronic passive congestion of the kidneys and had been on the Karrel diet until two days before the test was performed. The specific gravity did not fall below 1020 in two of the cardiac cases and the third cardiac case with an output of 215 c.c. had renal disease as well.

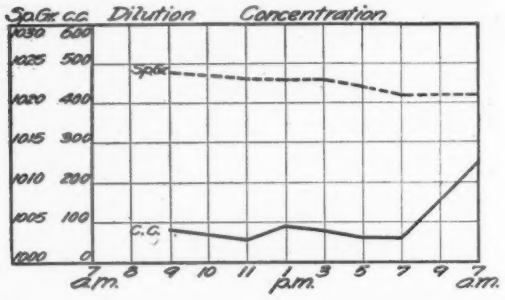


CHART II. Mr. Bu. Chronic passive congestion of the kidneys. A liter of water was taken at 7 A. M. During the following four hours the patient voided only 145 c.c. The specific gravity was fixed at a high level. The maximum specific gravity was 1024 and the minimum 1021, a range of only 3.

There were three cases of kidney disease in this group. One a case of severe chronic glomerulonephritis (diagnosis verified by autopsy) excreted only 115 c.c. of urine in four hours with a specific gravity of 1005. The remaining one of the nine cases with greatly diminished output had apparently recovered from a mild acute nephritis at the time the test was made. Albuminuria had disappeared. The patient excreted only 90 c.c. in four hours and the specific gravity was 1003.

IMPAIRED DILUTION OF THE URINE

There were eight cases in which the specific gravity during the dilution test did not fall below 1010. Three of these were practically healthy persons whose tissues happened to be partly dehydrated at the time the test was made. The effect of dehydration on the specific gravity during the dilution test is well shown in the case of M.F. He had a mild depression and loss of appetite. His kidneys were normal and there was no evidence of cardiac insufficiency. For a week previous to admission to the hospital he stated that he had eaten little food and apparently had taken little fluid.

TABLE II

	Water 7 A. M.	Urine 8-11 A. M.	Sp. Gr.
	Amount in c.c.		
April 25, 1925	1000	120	1020
April 28	1000	250	1010
May 1, 1925	1000	370+	1004

He was given 2000 c.c. of water on the day preceeding the last test. During the first dilution test the specific gravity did not fall below 1020. During the second dilution test it reached 1010, and three days later when the test was again repeated the specific gravity dropped to 1004. The results show the power of his kidney to secrete a dilute urine was not impaired. They also show the importance of repeating the test if dehydration is suspected.

Four of the cases were of heart disease with cardiac insufficiency. In three the high specific gravity was due to chronic passive congestion of the kidneys. In one case, the fourth of this group, partial dehydration from a Karrel treatment (800 c.c. of milk daily) was the probable explanation of the failure of the kidneys to dilute the urine.

The remaining case with impaired dilution was one of exophthalmic goitre. As the amount of water excreted was normal in the four hours, —885 c.c., the high minimum specific gravity, 1010, was apparently due to an excess of solids excreted during this period. That the kidneys' power to dilute the urine was not at fault was shown when the test was repeated a few days later. The specific gravity then dropped to 1005.

EXCESSIVE OUTPUT OF URINE IN FOUR HOURS

Eleven patients excreted more than the amount of water ingested during the first four hours. All of these patients were cases of neurasthenia or of vaso-motor neurosis. One had in addition primary hypertonia. All had apparently healthy kidneys. The detailed findings in one of these cases is shown in Chart I. In all but one test the specific gravity fell to the normal level of 1005. Two showed a slight disturbance of the concentrating power of the kidneys. This was probably due to an excess of water in the organism and not to renal deficiency. One of these when subjected to a more rigid concentration test showed a normal response.

The reaction of these patients to the test is the same as that observed by Schlayer[5] in slight diffuse renal injury, acute nephritis in the convalescent stage, double mild pyelitis, slight tuberculosis of both kidneys, and occasionally in the beginning of a genuine contracted kidney. He terms it the state of mild renal irritation.

The over-reaction of the test in my cases were probably related to a disturbance of the vaso-motor system.

IMPAIRED CONCENTRATION OF THE URINE

This is the most common disturbance in renal function in kidney disease. The normal lower limit of concentration in the test has been placed at 1025 (Volhard, Strauss). I have selected for special study those cases in my series in which the maximum specific gravity was 1020 or less. There were 14 cases that came in this group. In these there was a distinct failure on the part of the kidney to concentrate the urine

normally. That the failure may be due to extra-renal causes and not to loss of power on the part of the kidney was shown by its occurrence in two patients free from renal and heart disease. Both have shown normal concentrating power when the test was made under conditions that were evidently more favorable for the kidneys. It is hence evident that extra-renal factors, usually in all probability an excess of water in the organism, may prevent the kidney from demonstrating its ability to concentrate the urine. If the findings indicate a faulty concentration on the part of the kidney the test should be repeated before concluding that the kidney is diseased, unless other evidence makes it certain that the renal functions are damaged.

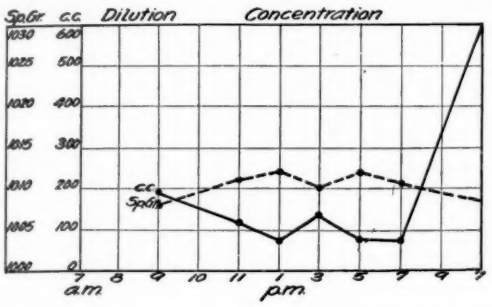


CHART III. Case 3. Mr. S. Primary contracted kidney. Malignant nephro-sclerosis (Volhard). Cardiac insufficiency. A liter of water was taken at 7 A. M. The output in four hours was 310 c.c. The specific gravity was fixed at a low level (complete hyposthenuria). The maximum specific gravity was 1012 and the minimum 1008. Range of specific gravity 4.

Four of the cases with partial hyposthenuria had arteriosclerosis with no definite evidence of nephritis. One was a case of heart disease without signs of chronic passive congestion of the kidneys. In all these cases the heart may have been at fault as Volhard and Fahr[20] found deficient concentration of the urine in the presence of cardiac weakness when renal disease was absent. The remainder, eight in number, comprised all the cases of nephritis studied and formed over half of the whole group with impaired concentration. In only two of these cases was there complete hyposthenuria, that is a maximum specific gravity of 1012 or less. See Chart III.

DILUTION AND CONCENTRATION OF THE URINE BOTH IMPAIRED

In 7 cases there was an impairment of both the dilution and concentration of the urine as shown by the tests. The findings in this group are shown in Table III.

Even with dilution and concentration both impaired there may be no actual disease of the kidney as in the case of exophthalmic goitre (Mrs. Ho.). Other tests on this patient gave normal findings. All of the other cases had definite renal impairment combined usually with cardiac insufficiency. The tests brought out clearly the well known fact that in marked chronic passive congestion without nephritis (diagnosis verified by autopsy), the fixation of the specific gravity is at a high level (Mr. B.), and in malignant nephrosclerosis or chronic interstitial nephritis (diagnosis verified by autopsy) (Mr. S.), the fixation is at a low level—complete hyposthenuria.

CONCLUSIONS

The dilution and concentration tests give important information regarding kidney function. If an abnormal response is obtained the tests should be repeated once or twice after measures have been taken to remove disturbing extra-renal factors, the chief of which are dehydration of the tissues and an excess of water in the organism. The tests should be employed in combination with the other functional methods of proved value and interpreted cautiously in the light of all facts that can be gained from the complete clinical study of the case. The tests have been found of distinct value in the detection of partial dehydration and latent oedema.

REFERENCES

1 Rowntree, L. G., and Geraghty, J. T.: An experimental and clinical study of the functional activity of the kidneys by means of phenolsulphonephthalein. Jour. of Pharm. and Exp. Therapeutics, 1910, 1, 579 (June).
2 Hedinger, M., and Schlayer, C. R.: Uber die Prüfung der Nierentätigkeit durch Probemahlzeit. Deutsch. Arch. f. klin. Med., 1914, 114, 120 (Apr.).
3 Mosenthal, H. O.: Renal function as measured by the elimination of fluids, salt, and nitrogen, and the specific gravity of the urine. Arch. Int. Med., 1915, 16, 733 (Nov.).
4 Mosenthal, H. O.: Metabolism in Nephritis. Endocrinology and Metabolism. Edited by Barker, New York, 1922, 4, 381.
5 Schlayer, C. R.: Die Beurteilung der kranken Nieren und der Auscheidungsform. Jahreskurse fur ärztliche Fortbildung, Mai Heft, 1918, 3.

TABLE III

	Amount of Urine voided in 4 hrs.	Max. and Min. Sp. Gr. in 24 hrs.	Variation in Sp. Gr.	Diagnosis
Mr. F. G.	134 c.c.	1020-1022	2	Chronic passive congestion of kidneys.
Mr. H.	215	1010-1021	11	Cardiac insufficiency and chronic nephritis.
Mr. B.	140	1021-1024	3	Chronic passive congestion of kidneys.
Mr. W.	412	1011-1020	9	Cardiac insufficiency.
Mrs. Ho.	885	1010-1014	4	Exophthalmic goitre.
Mr. S.	310	1008-1012	4	Malignant nephrosclerosis and cardiac insufficiency.
Mr. Sn.	480	1008-1012	4	Acute nephritis.

6 Strauss, H.: Die Nephritiden. Dritte Auflage. Berlin, 1920, 44.
7 v. Korányi, A.: Physiologische und klinische Untersuchungen über den osmotischen Druck thierischer Flüssigkeiten. Ztsch. f. klin. Med., 1897, 33, 1.
8 Volhard, F.: Die doppelseitigen hämatogenen Nierenkrankungen (Bright'sche Krankheit). Handb. der inneren Med. von Mohr u. Stähelin, Berlin, 1917, 3, 1210.
9 v. Korányi, A.: Krankheiten der Harnorgane. Schwalbe's Diagnostische und Therapeutische Irrtümer und deren Verhütung. Innere Medizin. Zweite Auflage, Leipzig, 1922, 25.
10 Kövesi, G., and Röth-Schulz, W.: Ueber Störungen der Wassersecernirenden Thätigkeit diffuserkrankter Nieren. Berlin klin Wchnschr., 1900, 37, 321 (Apr. 9).
11 Hanssen, K.: Beitrag zur Bestimmung der Funktions-fähigkeit der Nieren, Verhan. d. nord. Kong. f. inn. Med., 1902, Stockholm, 1903, 4, 150.
12 Volhard, F.: Ueber die funktionelle Unterscheidung der Schrumpfnieren. Verhand. des deutschen Kongress f. innere Med. Wiesbaden, 1910, 27, 735.
13 v. Müller, F.: Die Krankheiten der Harnorgane. v. Mering's Lehrbuch der inneren Medizin, fünfzehnte Auflage, Jena, 1925, zweiter Band, 6.
14 Munk, F.: Pathologie und Klinik der Nephrosen, Nephritiden und Schrumpfnieren, Berlin, 1918.
15 Schön, W.: Zur Frage der Funktionsprüfung der Nieren. Inaug. Diss. Berlin, 1917.
16 Siebeck, R.: Die Wasserausscheidung durch die Nieren und der Wasserhaushalt der Organismus. Deutsch. Arch. f. klin. Med., 1919, 128, 173 (Jan.).
17 Lyle, W. G., and Sharlit, H.: Influence of extra-renal factors on the renal functional test meal. Arch. Int. Med., 1918, 21, 366 (Mar.).
18 Siebeck, R.: Die Beurteilung und Behandlung der Nierenkranken, Tübingen, 1920.
19 Soderstrom, G., and Du Bois, E. F.: The water elimination through skin and respiratory passages in health and disease. Arch. Int. Med., 1917, 19, 931 (May).
20 Volhard, F., und Fahr, Th.: Die Brightsche Nierenkrankheit. Berlin, 1914, 227.

LAENNEC, THE MAN—1781-1826*

BY WILLIAM PEARCE COUES, M.D., F.A.C.S.

WHEN we look back to the stormy days of the French Revolution and the horrors of the guillotine, our thoughts are of Paris. That similar scenes were going on in many of the large towns of France, as in the Paris of '93, is somehow not thought of in connection with this horror of horrors. Nevertheless the guillotine was working in many of the large towns of the country, and in particular, Nantes was no exception to the rule.

In June, 1793, when the orgy of killing was at its height in Nantes, anyone passing across the quay by the river Loire could not fail to notice the figures of two little boys of eleven and twelve years at the lower windows of a house in the Place Bouffai, immediately opposite the quay,—the guillotine with its heavy scaffolding and block being placed almost underneath its windows. The faces of the little boys were pale with emotion and distorted with terror at the frightful sights they saw. These boys were Théophile and Michael Laennec; the house that of their uncle, William Laennec, a well-known physician of Nantes, who was undoubtedly responsible for Théophile's studying medicine and so giving to the world, "l'Auscultation **Médiate**".

Of Laennec's great contributions to medicine others will speak to you in detail tonight:—those regarding pathological anatomy and its connection with clinical signs and symptoms in general, as well as the discovery of, "l'Auscultation Médiate", and what it meant to medicine.

In this sketch I shall endeavor to visualize Laennec as boy and man both in his beloved Brittany and at Paris, the scene of his great triumphs.

To return to our two boys: history tells us that they had been sent to visit their Uncle from their father's house in Quimper, the father taking his parental responsibilities lightly and not contributing to their support as he should have done.

The Revolutionary Committee of Nantes, not satisfied with the ordinary killings by the guillotine, had their poor victims herded together in groups and mowed down by chain shot, besides perpetrating, through the infamous Carrière, almost under the Laennec windows, the hideous and fiendish republican infamy, "le mariage republicaine", which the most degraded savage would look upon with horror. Rouxeau says: "Not to awaken the fury of the patriots it was necessary that spectators appear from time to time at the windows, and the servants could do this with less repugnance than the masters. 'Dans le louable desir de former les ârms de bons petits sans-culottes aux infants des leurs patrons ils s'efforçaient des les garder a leurs cotés pendant toute la durées de ce spectacle de haut gout.' "

The boys were forced to live in the back of the house as much as possible as were the rest of the family, but even there the gruesome sound of the guillotine was heard, the boys always leaving the house for school by the rear doors. At last Dr. Laennec was able to secure another house at a distance from the dread Place Bouffai, and hither the family repaired, though the house was hardly finished and the plaster barely dry on the walls. Here the boys led a happier and more normal life away from the horrors of the Place, and the impecunious and callous father at Quimper.

We are told by Saintaignon that the Laennecs were of an old race of Brittany, the family being in Quimper for many generations, probably belonging to the Henneucs of Pleylen-Christ, mentioned in 1445 in the Reformation. They were probably descendants of a part of the family of Lohennec. Certain it is, according to Saintaignon, that Couey's "Armorial of Brittany," gives arms to Vincent Laennec, a notary of Concarneau, in 1573, from whom the great Laennec was directly descended. This Laennec, the direct ancestor, it is of interest to note, was of marked literary ability and left a precious autograph manuscript conserved

*Read at the annual meeting of the Boston Medical History Club, May 10, 1926.

still in the Archives of Quimper. It was a Dial of all the Acts to which he had given his signature.

Théophile's father married at thirty-four years Michelle Alexandre Félicité Guesdon, who died after a few years of married life, having given birth to four children. She is said to have suffered from tuberculosis. She came, says Rouxeau, "of a family of intellectuals and she was a grand-niece in both the maternal and paternal lines of the celebrated P. Bougeant, one of France's most able historians". Rouxeau further says, in recalling the old saying that there is no great man who has not had a remarkable mother, that Laennec's genius came from this side of the family.

Laennec pére was a literary vaurien, always changing or being unable to keep his civic appointments, a writer of madrigals, a laissez-faire and "After us the deluge" type. He married again in 1795 and Michael went back to Quimper from Dr. Laennec's, but Théophile decided to stay in Nantes with his Uncle and study medicine. It is impossible to over-estimate the influence of this good and wise man on the career of his illustrious nephew, for whose welfare he alone was directly responsible, and to whom his career gave such infinite pleasure. "Mon cher Théophile", was his constant thought, and his letters are deeply touching, many of which appear in the different accounts of the latter's life.

It was in a little house owned by his mother and situated on the Quay of Quimper that Théophile was born on the seventeenth of February, 1781. He was a Breton of the Bretons, learning to love and know all the country about Quimper and its past history and its language. Brittany seems particularly the country from which such a man as Laennec must have come, —unusual, mysterious, and as far removed from the commonplace as was her illustrious son. In regard to Brittany, the ancient Armorica of Caesar, Mosher says, "One is aware of a peculiar presence, a touch of the marvelous, the mysterious, a magic influence. Enchanted forests and enchanted people exist in Brittany. The fairies still dance around the dolmen on moonlit night. . . . The mystic vervain of that old inhabitant, the druid, has not lost its scent. All is fanciful and uncertain, as if enveloped in a subtle fog. Dreaminess pervades the atmosphere, the vague nebulousness of the middle ages".

From this land of salt sea breeze, grey rocks and downs, and Druidical forests of mystery, came the calm and prodigious intellect of one comparable only to Hippocrates in his vast store of medical lore, and almost superhuman accomplishments.

It was at the time when Théophile was a boy at Nantes that the oft-quoted letter to his parsimonious and improvident father was written:—

"My dear Father," he says, "I have no longer hat nor shirt nor a sou in my pocket; if you are as hard up as I am, I am sorry for you. If you are well off, I beg you to send me two louis".

We find Théophile entered as a student at the School of Medicine of the Hôtel Dieu at Nantes in September, 1795, when fourteen and a half years old. Soon after he was appointed military surgeon of the third class (as was Roux, at about the same age) at a salary of something like nothing a year, and in January, 1800, he was appointed Officer de Santé and was sent with the troops which were ordered to quell a royalist outbreak between Nantes and Quimper.

After this, he resumed his medical course and journeyed to Paris to complete it in that city of larger opportunities, being entered at the Ecole de Médecine May 2nd, 1801. Here he worked with a concentration and persistence seldom if ever surpassed, having in mind even the intensive efforts of his rival, Dupuytren. He soon began to write, his articles attracting notice immediately on account of their clarity, new ideas, forceful logic, and the painstaking care of their preparation.

The bitter attacks of Dupuytren and Broussais against him are unpleasant reading. Always he answered them courteously and pierced the contentions of Broussais concerning his "irritation" and "enteric" theory of disease with the well marshalled facts of the clinic and the post mortem room.

How Laennec first thought of his great discovery is interesting and though often quoted is never amiss. Crummer, in speaking of the story of, "l'Auscultation Médiate", says that: —"It is so dramatically simple as to be on a parity with the legend of Newton and the apple and Watt and the steam kettle, and marked an epoch in Medicine as great as either of these discoveries in Science". Laennec's oft-quoted experiment which he had noted from observing children at play was as follows. He says, "If you place your ear against one end of a wooden beam, the scratch of a pin at the other extremity is most distinctly audible. Taking a sheaf of paper I rolled it into a very tight roll, one end of which I placed over the precordial region, while I put my ear to the other. I was both surprised and gratified at being able to hear the beating of the heart—with much greater clearness and distinctness than I have ever done before by direct application of my ear".

The general uncleanliness of the hospital patient of the times, the anatomic difficulties in the way in women in direct auscultation of the anterior chest, and man's natural modesty were the factors which set Laennec to thinking out possible ways of surmounting these difficulties in the old method of examination.

We are told that when at Paris Laennec chose

to be under Corvisart at the Charité rather than Pinel at the Salpêtrière, the more theoretical school of medicine, though he had worked at the former hospital. During his first three years at La Charité he drew up a minute history of nearly four hundred patients. He wrote in shorthand, and had lessons in Greek so that he could better understand Hippocrates. (Compare, Bretonneau, who did the same thing at sixty.) September 3, 1803, he was awarded the Grands Prix in both medicine and surgery, a most unprecedented honor, and Uncle William was obliged to send money for the printing of his theses. The theses were dedicated to him, to his great joy.

Laennec was the first to describe the subdeltoid bursa and his essay on peritonitis, written early in his medical career is a classic. "At twenty-five years of age he had become a chief among morbid anatomists". (Hale-White.) He was a wonderful clinician even before his discovery of auscultation, using the then known methods of examination. In 1816 he was appointed physician to the Necker Hospital and in 1823 changed to the Charité, and the next year he succeeded Corvisart as full professor at the Medical College of France.

"He was practically the first internist to check his physical findings against pathological conditions as found at the post mortem many hundreds of times". He did this so that he could at last accurately foretell in the great majority of fatal cases what the necropsy would tell from the signs studied at the bedside. In this lay largely his greatness, combined of course with "l'Auscultation Médiate". As has been pointed out, Sydenham, Morgagni and Bichat had paved the way, incompletely, and there were many gaps. Laennec made the sound and safe causeway that the medical profession could walk on.

Laennec was small of stature, had high cheek bones, and prominent forehead, blue eyes, hair of chestnut color—usually negligently arranged. The face of a thinker and scholar and "a servant of Science and therefore of truth" (Pirogoff).

When at the Charité he lectured three days in the week. His ward rounds commenced late for the times, at ten o'clock. He was followed by forty or fifty students, many being foreigners, and he often talked to them and gave the histories in Latin; from these his fame spread quickly to many countries. His lecture is described as follows:—

"At half-past one o'clock a carriage drove into the Court of the College, a little wasted man, wearing a wide-brimmed hat, and wrapped in a large cloak which covered his black clothes, straightaway went to begin his lecture to an audience of about forty voluntary students". (Hale-White.) These listened enchanted to lectures that rivalled the famous *leçons orale* of Dupuytren at the Hôtel Dieu.

Honors came fast. In 1824 he was made a Chevalier of the Legion of Honor and appointed physician to the Duchess de Berry at francs 4000 a year salary. His greatest income was between $8000 and $9000, which, however, went many times as far as it would in these days of waste and extravagance and high prices.

Nothing in medicine is more deplorable than Broussais, the systematist's, attack on Laennec. The attacks of different enemies ridiculed his person and his flute playing. Broussais endeavoring to hold up to disdain his great discovery, asked whether Laennec lived in the lungs of his patients, that he could tell their state as accurately as he claimed. Laennec replied that it was not necessary for a naturalist to live in a chrysalis to tell that a butterfly would come out of it.

At the Charité he had twenty-two male and fourteen female beds. His two chief assistants were his cousin Mériadec, who lived at the hospital, and Victor Collin, who had a salary of 500 francs a year.

The severe strain of his intensive work began to tell on him in 1818. Never strong, his latent tuberculosis declared itself, as well as asthma, much insomnia and anginal pain. He had just finished his book, Hale-White tells us, and was in wretched physical condition. He decided to give up his work in Paris the next year, well knowing, as he wrote to his father, that his book had cost him his life, but he was willing to pay the price. He was not allowed, however, to sever all his Paris connections. The sea air of his native Brittany did him great good almost at once, and he busied himself in directing repairs on the ancestral place, Kerlouarnec, of which he was so fond. Here he lived out of doors, hunting with his two spaniels, consulting with the provincial physicians, teaching them to use the stethoscope, urging the value of fresh air, and helping the poor and reading much. A man was seen by him at this time in consultation, supposed to have a cavity in the lung and to be moribund from phthisis. Laennec auscultated him, said there was no cavity, but that the pleural sac was full of pus. A quart and a half was withdrawn and the patient recovered. Laennec thought that the seaweed helped phthisical people, and for a time had it sprinkled about the rooms of his patients in Paris. He realized as well as we do today the absolute importance of fresh air in treating pulmonary tuberculosis.

Apropos of this, Hale-White gives us an amusing quotation from Kipling's "Martlake Witches", "in which the Duke of Wellington and Laennec with his stethoscope play their part. You know the names of the Twelve Apostles, dearie? You say them names, one by one, before your open window, rain or storm, wet or shine, five times a day fasting. But mind you,

'twixt every name you draw in your breath through your nose". Again, "You set it in your window so that it holds up the sash, and thus you keep it, rain or shine, or wet or fine, day and night".

After a time his health improved greatly and he resumed his practice in Paris and late in 1824 he married Madame Argou, a devoted friend of long standing, who rendered the last year and a half of his life happier by her presence, encouragement, assistance, and devoted care. It was, however, the beginning of the end. We are told that in the Spring of 1826 he was seized with severe bodily weakness, diarrhoea and fever. He decided to attempt to get back to his beloved Brittany, and set out with his wife and servant in a travelling carriage. The journey was made with great difficulty, many stops being necessary. At last he reached Kerlouarnec, infinitely exhausted, but gradually improved somewhat, perhaps the wonderful air of Brittany contributing,—the Breton wind that he loved so much coming from the sea.

Anatole Le Braz, the Breton poet, writes of the Breton wind in these beautiful lines:

"Souffle, souffle, grand souffle amer,
O roi des vents, ô vent de mer.

O vent de mer, ô roi des vents,
On dit que c'est Dieu, quand tu passes,
Qui parle aux âmes des fervents
Dans l'immensité des espaces!"

Hale-White most touchingly describes the last hours of this great physician: "On August 13, 1826, he was in bed; at 3 p. m. he woke from his torpid state. His wife saw him take the rings off his fingers and place them on a table. She asked why he did this; he replied that it would soon be necessary that another should do this for him and that he did not wish that anyone should have the trouble. Two hours later, at the Place of the Foxes (his beloved Kerlouarnec), the soul of one of the greatest of physicians left its body. He was buried in the new cemetery near the parish church, a place of all others that he would have chosen, for, from his tomb, the eye wanders far over grey rugged cliffs and the wide, deep, ever-changing blue-green sea".

To many physicians of the present day the name of Laennec means little. "Laennec, Laennec? Oh, yes, he was the man who invented the stethoscope, wasn't he?" To the medical historian and those other physicians interested in the lives of the great of medicine, the name means all that is synonymous with the highest achievement,—one of the few great physicians of all time, a modern Hippocrates in the truest sense.

Perhaps if Laennec could speak to us of what gave him the greatest pleasure in life, it would be to tell of the looks of joy of his brothers of Brittany, sick and wounded in his hospital at Paris, to whom he could speak in their common language and give an affectionate hand-clasp, and to whom, through his efforts, spiritual consolation was made possible in the language of their beloved Brittany.

BIBLIOGRAPHY

1 Le Centenaire de l'Auscultation Médiate de René Théophile Hyacinthe Laennec (1781-1826). (Commemorative Discourses.) Paris, 1920.
2 Hale-White, Wm.: René Théophile Hyacinthe Laennec. Translation of selected passages from De l'Auscultation Médiate (first edition), with a biography by Wm. Hale-White. London: J. Bale, Sons & Danielsson, 1923.
3 Rouxeau, A.: L'Enfance et la Jeunesse d'un Grand Homme, Laennec avant 1806, Quimper, Nantes, Paris, 1781-1805. Paris, 1912.
4 Saintignon, H.: Laennec: sa Vie et son Oeuvre. Paris, 1904.
5 L'Auscultation Médiate. Various editions.
6 Crummer, L.: Laennec. Nebraska Med. Jour., 1919, IV, 315.
7 Thayer, Wm. S.: Laennec. Canadian Med. Assn. Jour., 1919, X, 769; Bull. Johns Hopkins Hosp., 1920, XXXI, 425.
8 Lian, Camille, and Finot, André: Laennec et la Clinique du Coeur. Aesculape, 1926, VI, 71.
9 Cumston, Chas. G.: An Historical Analysis of Laennec's Scientific Work. Med. Jour. and Rec., 1926, CXXIII, 387.
10 Guermonprez, F.: Un Mot sur Laennec. Lille, 1892.
11 René Théophile Hyacinthe Laennec. Med. Jour. and Rec., 1924, CXX, 286.

LAENNEC'S CLINICO-PATHOLOGICAL STUDIES*

BY HYMAN MORRISON, M.D.

It is to the glory of Laennec that the discovery of the stethoscope was but one of his achievements. Outstanding, indeed, it was, for it made possible the monumental work on mediate auscultation, and so laid the foundation of modern clinical medicine. It cannot, however, be dissociated from his work before 1816. This earlier work, always showing the master's hand, not only paved the way for what followed, but produced a number of contributions of first rank which helped to place pathology on the basis of a special medical science.

The amount of work Laennec put forth in the relatively short period of twenty-five years, both in its scope and influence on medical progress, is stupendous. Even as a student he was brilliant, as indicated by his winning the first prize both in medicine and surgery. Imbued by his great teacher, Corvisart, with the Hippocratic spirit to deal only with facts, indisputable facts attained by observation, this became the guiding force in his life. During his three years at the Charité, he accumulated records of four hundred cases, accurate, painstaking, bedside observations, checked up by careful, repeated post mortem examinations which served as the basis of all his future work. He began to communicate the results of his studies early, both before the anatomical and medical societies connected with the school and in the *Journal de Médecine.*

*Read at the annual meeting of the Boston Medical History Club, May 10, 1926.

In the chronological table of his works, there appear nine publications between 1802 and 1814. They include clinico-pathological studies on cases of heart disease, on a case of suicide committed with a razor, and on cases of acute inflammation of the peritoneum; anatomical studies on the arachnoid, on the synovial capsule between the humerus and acromion process, and on the capsule of the liver, spleen and kidneys; his first monograph on vesicular worms, and the last,—his doctor's thesis. Besides this, between 1802 and 1808, he wrote various book-reviews for the *Journal*,—one of these is noteworthy, it being his review of Corvisart's translation of the neglected, Anenbrugger's work on percussion, *Inventum Novum*, which he was soon to supplement with his own great invention. The nature of his contributions between 1804 and 1816 may be suggested by the topics of some of his communications: A number of papers on pathological anatomy and on helminthology; on melanotic and encephaloid tumors; on compression of the chest by a thoracic aneurism; on angina pectoris; on hydrocephalus; on a brain tumor; and on a new kind of hernia which he called intrapelvic or extraperitoneal. In collaboration with others, he contributed semiannually, in the *Journal de Médecine*, a resume of the current diseases, but there is no evidence, as some of his biographers mention, that he ever was its chief editor.

This earlier work of Laennec can be divided into three parts: First, his researches in normal anatomy; secondly, in parasitology; and thirdly, in pathological anatomy. His researches in normal anatomy were all done while he was still a student, and two were distinctly original contributions. In the *Journal de Médecine* of 1803, he described a synovial capsule situated between the acromion process and the humerus. It is now known as the subacromio-coracoid or subdeltoid bursa. Laennec realized that it had been seen by others, but he gave the first precise description of it. The other contribution in this field appeared the same year, in a paper entitled, "Capsules Which Envelop Certain Viscera and Furnish a Sheath for their Vessels." This is the first description of the fibrous capsule of the liver, spleen, and kidneys. Laennec credits Glisson and Waloeus with having independently described the fibrous sheath covering the branches of the portal veins and their accompanying biliary vessels, but they had considered it as a part of the peritoneum. He fixed the true anatomy of this sheath and showed it to be a part of the fibrous capsule of the liver which he had described for the first time.

In parasitology, or rather in helminthology, Laennec became interested also while still a student. In 1804, he read a paper entitled, "An Account of the Vesicular Worms, Principally Those Found in the Human Body." During the next ten years, a dozen other communications in this field of study appeared, but this part of his work is merely of historical interest. Laennec described accurately what he saw, the worms and the changes produced by them in the human body, and attempted a classification. He did not know, however, that the several species of vesicular worms which he saw were but the different larval stages of the toenia solium and toenia echinococcus.

His great interest, however, during this period was in the study of morbid anatomy, and his contributions in this field were of the first order. This work may be separated into two phases, the general and clinical pathological researches. The former is of historical rather than of practical value. In 1805 there appeared in the *Journal de Médecine* his "Note on Pathological Anatomy," in which he attempted a classification of the morbid tissues; this brought him into a priority controversy with Dupuytren. In 1812, he reëdited this classification in his article on pathological anatomy in the *Dictionaire des Sciences Médicales*. It was his intention later in life to write a complete treatise on pathology, but death interrupted it. In 1884, Cornil, as a tribute to the great physician, printed the introduction and first chapter from the manuscript. The classification is now out of date, but it has historical significance in being the first effort at generalizing and systematizing pathology.

Following this line of work, Laennec distinguished with precision for the first time the encephaloid from the scirrhous cancers, though he naturally, at his time, could not recognize the histological basis for the differentiation. He described, also for the first time, in collaboration with Bayle, the melanoses, now known as melanotic sarcoma, and introduced the name. He first presented a short communication on the subject in 1806, but he has a complete anatomical and clinical description in his treatise on mediate auscultation, in relation to melanotic tumors of the lungs.

In the *Dictionaire des Sciences Médicales*, there are also the following articles by Laennec on general pathology: accidental cartilages, degeneration, degenerescence, disorganization, encephaloids, fibromata, and accidental fibro cartilage. Garrison also mentions that Laennec was the first to describe the anatomical tubercle.

His outstanding contributions in pathology, however, are found in in his clinical pathological researches. Under the influence of Bichat and Corvisart, Laennec was among the first to appreciate that clinical comprehension of disease must rest upon a thorough knowledge of the corresponding anatomical changes gained by comparing carefully recorded clinical observations with post-mortem examinations of the organs and tissues. It was in this spirit that he collected his records of cases during his student

days. His very first communication was a report on a case of heart disease giving his clinical and post mortem observations. Two months later, in 1802, there appeared his second publication; it was entitled, "Histories of Cases of Inflammation of the Peritoneum, Collected in the Medical Clinic of the School of Medicine in Paris, under the Supervision of Professors Corvisart and Leroux." This is a remarkable paper and forms a land-mark in the history of clinical medicine—it is the more remarkable in that Laennec was then only twenty-one years old, and a second year student. Peritonitis was then unknown to the clinicians, and Bichat had only briefly mentioned it in his last course. Laennec had followed his six cases carefully, and gives detailed clinical records followed by autopsy reports. The descriptions, both clinical and pathological, are masterly and definitely established acute peritonitis as a clinical entity. This was but a forerunner of his epoch-making work on diseases of lungs and heart, which subsequently were embodied in his work on "Mediate Auscultation."

Laennec's name is probably most often used in relation to atrophic cirrhosis of the liver. Rolleston, in his "Diseases of the Liver," devotes the following two sentences to this matter, "The term cirrhosis was invented in 1819 by Laennec, who regarded the bile stained 'hob nails' as masses of yellow new growth invading the liver, hence cirrhosis. Hanot dutifully proposed that portal cirrhosis should be spoken of as Laennec's cirrhosis." In Laennec's own work the only mention of this topic is in a foot note on page 368 of the first volume of the first edition. The note, in relation to his description of the liver in a case of "chronic left-sided pleurisy with ascites and organic disease of the liver," reads in part as follows: "Cette espèce de production est encore du nombre de celles que l'on confond sous le nom de *squirrhe*. Je crois devoir la désigner sous le nom de *cirrhose*, à cause de sa couleur. Son développement dans le foie est une des causes les plus communes de l'ascite, et a cela de particulier qu'à mesure que les cirrhoses se développent, le tissu de foie est absorbé: qu'il finit souvent, comme chez ce sujet, par disparaître entièrement; et que, dans tous les cas, un foie qui contient des cirrhoses, perd de son volume au lieu de s'accroître d'autant. Cette espèce de production se développe aussi dans d'autres organes, et finit par se ramollir comme toutes les productions morbifiques."

In 1923 there was published a facsimile reproduction of Laennec's own copy of his doctor's thesis. It is entitled "Propositions sur la doctrine d'Hippocrate relativement à la médecine pratique." This little work is not only of historical interest, but it shows Laennec's keen understanding of the Father of Medicine. The thesis is divided into three parts. In the first, Laennec distinguishes between the method of Hippocrates and his doctrine. The only method by which one can acquire knowledge in medicine consists in not adopting any principle which cannot be proved by a large number of facts, in studying carefully the characteristics and course of diseases, and in treating them in ways which observation found useful in similar cases. This method, said Hippocrates, was known long before him, and he regarded it as the only one by which real discoveries could be made. True physicians, Laennec goes on to say, cannot differ as to method. They may differ only in so far as facts may be seen from different angles. Thus, diseases may be classified as to etiology, symptomatology or treatment. The Hippocratic doctrine was that master's mode of approach in classifying disease; applied to practical medicine, it divided symptoms into two classes, (a) those specific for any one disease, such as the erythema of erysipelas, and (b) those which may appear in more than one disease, the epiphenomena, as delirium or insomnia. The first serve in the establishment of the diagnosis, while the second help in the prognosis. In the final part of the thesis, Laennec studies the utility of the Hippocratic doctrine in practical medicine, and he agrees that in the treatment of internal diseases it is less important to know the specific symptoms, than those common to many, for the latter indicate the progress and severity of disease, though Laennec insists on the importance of diagnosis. He concludes with a quotation from Klein, "I hold medicine free; I do not range myself either with the ancients or moderns. I follow one or the other group only where it seeks the truth. More often I repeat the observations myself."

Laennec followed the method of Hippocrates faithfully, and the results that it yielded have entitled him to be ranked with the foremost physicians of all time.

SOME EDITIONS OF LAENNEC'S WORK ON MEDIATE AUSCULTATION*

BY HENRY R. VIETS, M.D.

A STUDY of the various editions of Laennec's "De l'Auscultation Médiate," as published in France, England, Germany, America, Belgium and Italy, within a relatively short time after the initial appearance of the book in 1819, gives us a clear idea of the importance of Laennec's work in contemporary eyes. The demand for the volume must have been great for, although we do not know the size of the editions, we are able to trace nineteen distinct printings in the

*Read at the annual meeting of the Boston Medical History Club, May 10, 1926.

period 1819-1839. Four of these were French, five English, four American, three German, two Belgian, and one Italian. Another English edition appeared in 1846, making twenty well known early issues. Since the latter date a number of partial reprints and extracts of the book have appeared, such as the splendid translation of selected passages by William Hale-White, London, 1923, and the French reprint of the second edition in 1879.

It is quite likely that the list of editions appended to this short communication is incomplete. Some issues may have been missed and even of the list as given, I have seen only twelve of the twenty, eleven of them being in the collection at the Boston Medical Library. There are, of course, various editions in private libraries. All are to be found in the excellent collection of Dr. Henry Barton Jacobs of Baltimore, who has been kind enough to send me a list and photographs of his editions. No one public library in America seems to have the complete list, the nearest to it being the collection in the Library of the Surgeon General's office, Washington. A rare association copy is owned in this country by Dr. John Fulton, the title page of which is reproduced (Figure 1). This copy was apparently owned by Laennec

DE

L'AUSCULTATION

MÉDIATE

OU

TRAITÉ DU DIAGNOSTIC DES MALADIES

DES POUMONS ET DU CŒUR,

FONDÉ PRINCIPALEMENT SUR CE NOUVEAU MOYEN D'EXPLORATION.

PAR R. T. H. LAENNEC,

D. M. P., Médecin de l'Hôpital Necker, Médecin honoraire des Dispensaires, Membre de la Société de la Faculté de Médecine de Paris et de plusieurs autres sociétés nationales et étrangères.

Optimo patruo
altero patri
Th. Laennec

Μέγα δὲ μέρος ἡγεῦμαι τῆς τέχνης εἶναι τὸ δύνασθαι σκοπεῖν.

Pouvoir explorer est, à mon avis, une grande partie de l'art. HIPP., *Epid. III.*

TOME PREMIER.

A PARIS,

CHEZ J.-A. BROSSON et J.-S. CHAUDÉ, Libraires, rue Pierre-Sarrazin, n° 9.

1819.

FIG. 1. Title page of first edition with autograph of Laennec and dedication to his uncle. This volume is now owned by Dr. John Fulton, Brookline, Mass.

and given by him to his uncle who was so kind to him during his early life.

French Editions. All the four important French editions are well known and are to be found in most of the larger American libraries. They first appeared in Paris, 1819, 1826, 1831 and 1837. In the second edition the title was slightly changed and the contents was entirely rearranged. Laennec, in the first edition, described the stethoscope and showed how it might be applied in the auscultation of the chest, but did not lay special stress on its value as an instrument of differential diagnosis. In the second edition, however, he took up the various diseases in order and showed what might be found, in addition to a routine clinical examination, by the use of his stethoscope. He thus, by altering his point of view, greatly increased the value of his work. The third edition (1831) appeared in three volumes instead of two, various notes having been added by his nephew, Mériadec Laennec. The fourth edition was also in three volumes and in addition to Mériadec Laennec's notes there were notes by Professor Andral. All issues came from the publishing house of J.-S. Chaudé. The first edition only being issued with J.-A. Brosson.

English Editions. The first English edition appeared in 1821, two years after the first French edition. It was a one-volume work. It was translated by John Forbes*. Forbes probably used the second French edition, which had appeared the year before, in compiling his second English edition. He also added a sketch of the author's life. The third English edition, two years later (1829), differs only slightly from the second English edition. A fourth edition, published by Longman, appeared in 1834 and another by Baillière in 1846. I have not been able to trace an English edition of 1838, although it is mentioned in a note on Sir John Forbes in the Dictionary of National Biography.

American Editions. The first American edition, published in Philadelphia by James Webster, 1823, is a reprint of the first English edition (1821). There was apparently no American edition to correspond with the second English edition in 1827. Was it possible that the demand in America for this extraordinary work was not so great as in England, or did the wise Philadelphian publisher issue a large enough first edition in 1823 to cover the demand of the sparsely populated new country? At all events a new American publisher, Samuel Wood and Sons, New York, brought out the second American edition in 1830, which corresponds with the third English edition of 1829. The third American edition, in 1835, was a reprint of the 1834 English edition. In 1838 the fourth American edition appeared, which was translated from the third and fourth French editions.

German Editions. A German edition appeared in Wiemar in 1822. This apparently is a very rare edition and I have not been able to see a copy, although there is one in the Library of the Surgeon General's Office. Another edition appeared in 1832, translated from the French by Meissner and published in Leipzig. The third edition, in 1839, is only a cheaper reprint of the 1832 issue. All of these editions are rare in America.

Belgian Editions. There are also two very rare Brussels editions, one in 1828, a copy of which is in the Library of the Surgeon General's Office and another dated 1834. The only reference I found to this second Brussels edition was through the kindness of Dr. William Francis, who reports that there is a copy in the Osler Library. He has sent me a complete decription of this edition, which seems to be only a reprint of the better known 1828 Brussels edition. As a matter of fact, in the Osler copy the title page of the 1828 edition is pasted on the cover of the 1834 edition. Apparently the 1834 edition was only a re-issue with a newly dated title page.

Italian Edition. This, appearing in 1833-1836, one volume each year, was a translation of the third (1831) French edition, with the notes by Mériadec Laennec. It is rare in this country.

*Sir John Forbes (1787-1861) apparently saw the value of Laennec's work when many physicians treated it with contempt. He also translated, three years later (1824), Auenbrugger's important work on "Percussion." This work had long remained unknown to English physicians, since it was first published in 1761. Attention had been called to its importance in France by Corvisart (1808). Thus it took over sixty years for Auenbrugger's *Inventum Novum* to reach the great majority of English physicians. On the other hand, Laennec's *L'Auscultation* was translated into English two years after its first appearance in Paris.

LAENNEC R[ENE] T[HEOPHILE] H[YACINTHE] 1781-1826.

FRENCH EDITIONS

1. De l'auscultation médiate, ou traité du diagnostic des maladies des poumons et du coeur, fondé principalement sur ce nouveau moyen d'exploration.
   2 v. XLVIII, 456 pp., 4 l., 4 pl.; XVI, 472 pp. 8°. *Paris: J.-A. Brosson and J.-S. Chaudé.* 1819.
2. Traité de l'auscultation médiate et des maladies des poumons et du coeur. 2 éd.
   2 v. XXXVI, 728 pp., 4 pl.; 790 pp., 8°. *Paris: J.-S. Chaudé.* 1826.
   Also: Reprinted. Ed. de la Fac. de Méd. de Paris.
   XXIV, 986 pp., 1 pl. 8°.
   Paris: Asselin et Cie. 1879.
3. *The same.* Augmentée de notes par Mériadec Laennec. 3 éd.
   3 v. XXXII, 540 pp.; 551 pp.; 416 pp., 4 pl. 8°.
   Paris: J.-S. Chaudé. 1831.
4. *The same.* Avec des notes et additions de M. M. Laennec; considérablement augmen-

tée par M. Andral. 4 éd.
3 v. XXVIII, 672 pp.; 704 pp.; 580 pp., 2 pl., 4 pl. 8°.
Paris: J.-S. Chaudé. 1837.

ENGLISH EDITIONS

1. A treatise on the diseases of the chest, in which they are described according to their anatomical characters, and their diagnosis established on a new principle by means of acoustick instruments. Translated from the French with a preface and notes by John Forbes.
XXXVIII, 437 pp., 8 pl. 8°.
London: T. & G. Underwood. 1821.
2. A treatise on the diseases of the chest and on mediate auscultation. Second edition, greatly enlarged: translated from the French with notes and a sketch of the author's life by John Forbes.
XXVIII, 722 pp., 8 pl. 8°.
London: T. and G. Underwood. 1827.
3. A treatise on the diseases of the chest and on mediate auscultation. Translated from the latest French edition, with notes and a sketch of the author's life, by John Forbes. Third edition revised, with additional notes.
XXVIII, 736 pp., 8 pl. 8°.
London: Thomas & George Underwood. 1829.
4. A treatise on the diseases of the chest and on mediate auscultation. Translated from the latest French edition, with copious notes and a sketch of the author's life, by John Forbes. Fourth edition, considerably enlarged and improved, with many additional notes and an extensive bibliography of the different diseases.
XLIV, 676 pp., 2 pl. 8°.
London: Longman, Rees, Orme, Brown, Green, and Longman; Whittaker and Co.; Simpkin and Marshall; J. Chidley; E. Portwine; and Henry Renshaw. 1834.
5. [not seen] London: 1838.
6. A treatise on mediate auscultation, and on diseases of the lungs and heart. With notes and additions of M. Mér. Laennec and of M. Andral. Translated from the latest edition by a member of the College of Physicians. Edited by Theophilus Herbert, with practical notes condensed from the lectures of F. H. Ramadge.
XXXI, 862 pp., 9 pl. 8°.
London: H. Baillière.
Paris: J. B. Baillière. 1846.

AMERICAN EDITIONS

1. A treatise on the diseases of the chest, in which they are described according to their anatomical characters, and their diagnosis established on a new principle by means of acoustick instruments. Translated from the French with a preface and notes, by John Forbes. First American edition.
VIII, 319 pp., 8 pl. 8°.
Philadephia: James Webster. 1823.
2. A treatise on the diseases of the chest and on mediate auscultation. Translated from the latest French edition, with notes and a sketch of the author's life, by John Forbes. From the third revised London edition, with additional notes.
XXVIII, 736 pp., 8 pl. 8°.
New York: Samuel Wood & Sons, and Collins & Hannay.
Philadelphia: John Grigg, and G. Auner. 1830.
3. A treatise on the diseases of the chest and on mediate auscultation, translated from the latest French edition, with copious notes and sketch of the author's life, by John Forbes. From the fourth London edition, considerably enlarged and improved, with many additional notes and an extensive bibliography of the different diseases.
XLIV, 675 pp., 2 pl. 8°.
Philadelphia: Desilver, Thomas & Co.
New York: Samuel Wood & Sons. 1835.
4. A treatise on the diseases of the chest, and on mediate auscultation, translated from the third French edition, with copious notes, a sketch of the author's life, and an extensive bibliography of the different diseases by John Forbes. To which are added the notes of Professor Andral, contained in the fourth and latest French edition, translated and accompanied with observations on cerebral auscultation, by John D. Fisher.
XLVIII, 784 pp., 2 pl. 8°.
New York: Samuel S. and William Wood.
Philadelphia: Thomas, Cowperthwaite and Co. 1838.

GERMAN EDITIONS

1. Die mittelbare Auskultation, (das Hören mittelst des Stethoscops) oder Abhandlung über die Diagnostik der Krankheiten der Lunge und des Herzens, auf das neue Erforschungsmittel gegründet. Nach dem Französischen im Auszuge bearbeitet.
VI, XII, 618 pp., 4 pl. 8°.
Weimar: Landes-Industrie Comptoirs. 1822.
2. Abhandlung von den Krankheiten der Lungen und des Herzens und der mittelbaren Auskultation als eines Mittels zu ihrer Erkenntniss. Aus dem Französischen übersetzt von Friedr. Ludw. Meissner.
2 v. XXVIII, 564 pp.; 626 pp., 4 pl. 8°.
Leipzig: August Lehnhold. 1832.
3. *The same.*
2 v. XXVIII, 564 pp.; 626 pp., 4 pl. 8°.
Leipzig: Lehnhold. 1839.

BELGIAN EDITIONS

1. Traité de l'auscultation médiate et des maladies des poumons et du coeur. Nouvelle édition, publiée par les soins du docteur C.-J.-B. Comet, et augmentée d'une notice historique sur Laennec, rédigée par M. Bayle.
   XXXII, 657 pp., 5 pl., 2 l. 8°.
   Bruxelles: A la Librairie Médicale et Scientifique. 1828.
2. Traité de l'auscultation médiate et des maladies des poumons et du coeur. Nouvelle édition, augmentée de notes et additions par le docteur Mériadec Laennec, et d'une notice historique sur Laennec, rédigée par M. Bayle.
   XXXII, 657 pp., 60 pp., 3 l., 7 pl. 8°.
   Bruxelles: J.-B. Tircher. 1834.

ITALIAN EDITION

Trattato della ascoltazione mediata e delle malattie dei polmoni e del cuore. Traduzione fatta sulla terza edizione di Parigi del 1831 con note del Sig Meriadec Laennec. Dal sig. d. Angiolo Modigliani.
4 v. XXIV, 412 pp., 4 pl.; 414 pp., 3 pl.; 362 pp., 2 pl.; 302 pp. 8°.
Livorno: Bertani, Antonelli, E C. 1833-1836.

RELATION OF THE COLON TO ABDOMINAL TUMORS

BY J. F. BALDWIN, M.D., F.A.C.S.

WHEN a surgeon is consulted in a case of abdominal tumor his first desire is to ascertain the origin of the growth. Usually the diagnosis can be arrived at promptly from the history of the case, by palpation and the location of the tumor. Occasionally, however, it is wise to reach a diagnosis only by the method of exclusion. The relationship of the new growth to adjacent organs is of prime importance in such cases, and it is here that an exact knowledge of regional or topographical anatomy is of great value.

A knowledge of the relationship of the colon to abdominal tumors will usually aid very positively in making a differential diagnosis. Ziemssen, in 1863, suggested that inflation of the colon would frequently aid in a differential diagnosis of colonic disease. Harris, of Chicago, in 1898, also called attention to the same method of treating the colon in order to aid in diagnosis (*Journal of the American Medical Association*, February 11, 1898). Neither of these papers seemed to attract much if any attention. An article of my own on the same subject was published in the *American Journal of Obstetrics*, in 1903, but that paper shared about the same fate as its predecessors.

Writers in general, even the most recent, seem utterly to ignore this use of the colon in the diagnosis of abdominal disease.

Roughly speaking, the ascending, transverse and descending portions of the colon constitute three sides of a square, and divide the abdominal cavity into four regions: a central region, surrounded on three sides by the colon; a superior, above the transverse colon; and a right and left lateral region. A tumor originating in one of these regions may crowd over into another, but it can do so only by displacing the colon, and it is the study of this displacement which enables one to determine as a rule the origin of the tumor. In the central area, in addition to tumors connected with the uterus and ovaries, will be found tumors of the omentum and mesentery, of the retroperitoneal glands, of the small intestine, and malignant, parasitic and other rare growths, the character of which must be determined if at all by other means; their relationship to the colon simply determines their location, not their character.

Under ordinary circumstances the colon can be pretty accurately outlined by percussion, but when distended by air, which can be easily introduced through the anus by an ordinary bulb syringe, the outline can be determined with absolute certainty. While the colon itself may be displaced by other abdominal viscera and tumors, the mesocolon has its parietal origin pretty uniformly fixed. This natural attachment is shown in all standard works on anatomy. Bearing this colonic attachment in mind, and knowing its relationship to the abdominal viscera, the surgeon will by percussion gain much information of a diagnostic character when trying to determine the origin of an obscure abdominal tumor, and it will seldom be necessary for him, if he is at all expert in physical diagnosis, to distend the colon artificially; though such a procedure will in doubtful cases be essential.

Most abdominal tumors originate in the ovaries, uterus, kidneys, spleen, liver, pancreas, or omentum. Taking these up in the order named, it will be found that the colon must necessarily be on the outside of the tumors originating in the ovaries or uterus.

The kidney is normally behind the colon. A tumor, therefore, originating in the kidney will develop between the layers of the mesocolon, and the colon will be found in front of the tumor or towards its inner side. Tumors of the adrenals, and those developing in pararenal tissue, or from the Wolffian body, will also produce an anterior or inner displacement of the

colon. A tumor developing in a floating kidney, while usually appearing first on the outside of the colon, may eventually enter the central area so that the colon presents upon its outer side; but when the patient is recumbent, the tumor will usually slip back into its original position unless held by adhesions. Any tumor which displaces the ascending or descending colon forward or inward is in all probability a tumor of the kidney or of the adrenal.

Some years ago I gave very unusual care to the study of a tumor involving the upper abdomen on the right side. The inflated colon was carefully studied in this connection, and it was finally decided that the tumor had developed from the under surface of the liver. The urine had been carefully studied but had shown nothing abnormal whatever. There was no history of disturbance of the kidney or bladder. Several specialists had studied this case with me in anticipation of its presentation at a surgical clinic. At the operation the abdomen was opened directly over the tumor, when it was found that it was a hypernephroma developing from the extreme upper end of the right kidney, which in its development had become firmly attached to the under surface of the liver and thus exactly simulated a primary tumor of that viscus. Its removal with the kidney was readily accomplished with surgical recovery of the patient, but he was a transient negro and passed from observation.

In this case a pyelogram might have at least suggested the correct diagnosis, but the case occurred before the days of pyelograms.

The spleen must necessarily be on the outside of the descending colon, and if greatly enlarged, will override it entirely. Bearing this fact in mind it would seem as though there should be no difficulty in the differential diagnosis between tumors of the spleen and those of the kidney, or of the ovary; and yet such mistakes are being frequently made and by the best men in the profession. In the *Journal of Obstetrics*, of April, 1902, is a report of three splenectomies which had been made at the Johns Hopkins hospital. In two of the cases the tumor was supposed to be ovarian, and in the third the diagnosis was a cystic kidney. In the report of these cases nothing is said to indicate that any examination was made to determine the relationship of the colon to these growths.

In his valuable study of some cases of hypernephroma, in the issue of the Boston Medical and Surgical Journal of March 18, 1926, Dr. Chute states that in a few cases he has "known excellent observers to confuse a renal mass in the left loin with the spleen in spite of the fact that they could find no notch. On the right side a tumor of the kidney has in two cases been confused with a big gall bladder." Dr. Chute very properly states that in those cases the deformity of the kidney pelvis, shown by a pyelogram, would have settled the diagnosis, but the blunders could have been easily avoided by a study of the tumors in their relationship to the colon, and without the refinements required to secure a pyelogram. The finding of the splenic "notch" is a valuable point in diagnosis, but should not be regarded as pathognomonic. One Professor of the Practice of Medicine, with whom I was called in joint consultation, insisted that a tumor on the left side of the abdomen was a spleen because he could feel the notch. My diagnosis had been a tuberculous kidney, and when I asked him to explain the presence of the descending colon in front of the tumor he was not able to do so, but ignoring that anatomical argument insisted that he "could feel the notch." Later events proved that what he thought was the notch was simply a depression between two tuberculous projections of the kidney.

An enlarged spleen, with its suspensory ligament and gastrosplenic omentum elongated, might perhaps, if the patient were in the erect position, be apparently located on the inner side of the descending colon; if, however, the patient were examined when recumbent, the spleen, in the absence of adhesions preventing it, would slip back into its proper position and then the colonic tympany could be easily made out on its median side.

Enlargement of the liver crowds the colon down or overrides it. There should, therefore, be no difficulty in differentiating the liver from any tumor arising from the pelvis or from the kidney. The gall bladder, being a part of the liver, also crowds down or overrides the colon. It may even, when elongated, hang down in front of it for a considerable distance. Without bearing these facts in mind it would many times be difficult to diagnosticate between an enlarged gall bladder and a tumor of the right kidney, but remembering that the gall bladder lies above or in front of the colon, while the colon lies in front of, or somewhat to the inner side of, an enlarged kidney, the diagnosis between these two is not difficult.

A Reidel's lobe presents the same anatomical conditions as does a gall bladder, and as a distended gall bladder is frequently found directly connected with such a lobe the differential diagnosis in many cases will necessarily be impossible.

Tumors of the stomach will, of course, crowd the transverse colon downward.

Tumors of the pancreas have frequently been mistaken for something else; often in the female for tumor of the ovary. A study of the relationship of the transverse colon in these cases would almost certainly obviate the error, since in 95 per cent. (Harris) of these cases a tumor of the pancreas appears above the transverse colon. In a few cases it lies behind the colon, but even in these the fixed location of the trans-

verse colon would render a correct diagnosis almost certain. Very rarely the pancreatic tumor projects above the stomach, between it and the liver.

A cyst of the extremity of the pancreas may appear behind the ascending or descending colon, and thus simulate a tumor of the kidney; but ordinarily the transverse colon will suffer some displacement, and this will lead to a correct diagnosis.

In one case of tumor of the tail of the pancreas the differential diagnosis lay between a cystic tumor of the pancreas and a tumor of the left kidney, or of the suprarenal capsule. The fact that the urine from the left kidney showed evidence of a pyelitis, led me to rather favor the renal origin of the tumor. Because of this uncertainty, an anterior incision was made which at once revealed the location of the cyst. It was opened and drained, and the patient recovered.

Tumors of the omentum, if developing in its lower portion, cannot by their relationship to the colon be distinguished from tumors arising in the pelvis; their diagnosis must be determined, if at all, by exclusion.

Those rare tumors which develop between the folds of the mesentery or of the mesocolon, must be diagnosticated by other means than by their relationship to the colon alone, and as a rule their exact character is not determined until operation.

It is seldom necessary to inflate the colon to any marked degree, since the surgeon by careful palpation as the air is being injected can feel it passing under his fingers and thus locate the colon without any discomfort to the patient, though under no circumstances have I noticed any special discomfort even when full dilatation was found necessary. The injected air is readily passed following a stimulating enema.

INTRODUCING SOLUTIONS SUBCUTANEOUSLY

BY WELLER VAN HOOK, M.D.

FORTUNATELY all physicians now appreciate the usefulness of the parenteral introduction of fluids. The applicability of the procedure ranges from mere convenience to the saving of life, and from the choice of drugs used in moderate volume to the introduction of great quantities of water bearing the "normal" proportion of salt, two per cent. of sodium bicarbonate and five per cent. of glucose.

When large volumes of aqueous solutions are required it may be necessary to throw them into the system hastily, half a liter or a liter in a very short time. The sudden introduction of fluid intravenously is decried by the best physiologists except in great emergency, as when the blood volume is suddenly reduced. The right heart may be embarrassed and the general fluid balance may be disturbed by the swift introduction of fluids.

The number of routine cases demanding parenteral fluid administration is very great in surgical practice if full regard is paid to the needs of those patients who are not *in extremis* but are to be benefited by the prompt introduction of overdoses of water holding salt, glucose, sodium bicarbonate, etc., in solution. In other words, there are few patients who do not strongly need such solutions after anaesthesia and operation, to replace fluids lost, to supply salt, soda and sugar and to encourage rapid elimination.

Intravenous and massive subcutaneous injections meet the rough requirements of the gross emergency cases, while, where very large quantities of fluid are to be kept running for hours and days, the intravenous canula method, so eloquently advocated of late by Matas, is ideal.

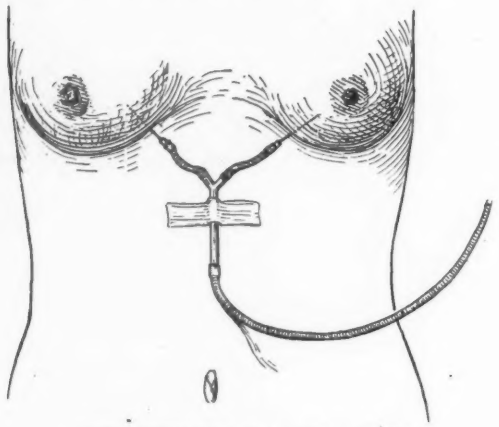
I wish to protest against the violent disruption of the loose subcutaneous tissues by the needless, sudden introduction of quantities of solutions into them. It may suit the convenience of thoughtless attendants to throw distending masses of solutions into the submammary tissues, but *it serves no useful purpose to introduce those fluids much faster than they can be absorbed.* And every thoughtful person will admit that the rapid introduction produces trauma, even if slight, and often pronounced pain and discomfort, while sloughing is an occasional misfortune.

Again, I protest against the thrusting of heavy needles through the skin of unanaesthetized patients without preliminary local anaesthesia. Often one sees enthusiastic young men drive needles more than a millimeter in diameter through the skin of sensitive patients, even women and children, in a manner most careless and cruel. A hypodermic syringe-full of one per cent. novocaine solution used beforehand in preparation for each large needle thrust through the skin prevents pain.

But the special object of this communication is to recommend a very gentle and efficacious procedure for use where, as is so often the case, fluids are needed for introduction with moderate rapidity only. Where the patient can absorb from the stomach only small quantities of fluid or can utilize only moderate amounts of fluid by proctocleisis the introduction of one to three liters of solution per twenty-four hours may yield the happiest of results. This effect may be brought about, as my own experience has demonstrated, by the following method:

From a reservoir kept warm by an electric

light bulb, carry down a tube interrupted by a drop-regulating mechanism (proctocleisis drip bulb) to the patient's mammary regions. If a



Hypodermocleisis with small needles.

single needle is used only one terminal tube is required; but if two needles are required, as is usually the case, a small y-tube is provided. Now the point of our suggestion is this—that ordinary hypodermic needles of gauge eighteen are quite large enough for most purposes. They are introduced directly or, as I prefer, after the skin has been anaesthetized by the introduction of a drachm or two of novocaine solution through a number 27 gauge needle on a hypodermic syringe.

One gauge eighteen needle, used with the drop regulator, will deliver fifty cubic centimeters of fluid per hour without distension of the skin or pain! This is a matter of much importance in the management of women and children. With no fuss and practically no pain the fluid is introduced and the therapeutic need is met.

One needle thus used will deliver twelve hundred cubic centimeters per day; while of course, two needles will double the amount. The tubes bearing the needles are fastened to the skin with adhesive plasters. In extreme emergency additional needles might be used.

This method simplifies hypodermocleisis and removes its terrors.

The Massachusetts Medical Society

THE CONTROL OF THE COMMUNICABLE DISEASES PREVALENT IN MASSACHUSETTS*

With a Study of the Mortality Due to Them During the Past Seventy-Five Years

BY EDWARD G. HUBER, M.D.

(Continued from page 172)

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V. GENERAL DISCUSSION OF CONTROL MEASURES

Pasteur said "It is in the power of man to cause the infectious diseases to disappear from the face of the earth." His prophecy shows promise of materializing in the case of small pox, typhoid, malaria, diphtheria, and yellow fever, but the other diseases are still far from controllable. The following are the chief factors which interfere with attempts to enlarge the small list of diseases just given:

1. Ignorance as to etiology.
2. Ignorance as to means of transmission.
3. Carriers of virulent pathogens.
4. Slowness and indifference of the general public which leads to reluctance to adopt new, proven measures; and lack of coöperation of the general public, including medical profession.
5. Evasion of accepted control measures by the ignorant and wilfully disobedient.
6. Poverty, preventing full application of recognized measures.

In Massachusetts the transmission of communicable diseases is accomplished in practically only two ways,—through the upper respiratory tract and through the digestive tract. Since the control of our food and water is comparatively easily accomplished, the great problem now is to check those diseases which gain entrance to the body through the nose and mouth by means of infected saliva and feces. Each disease in the communicable group requires a different method of control but there is one principle common to all and that is that except in milk, pathogens cannot reproduce outside the body. The danger does not lie in air, dust, or fomites, as was formerly thought, but in the direct transfer, not so much from the sick person, but from the unrecognized case or carrier. The problem of the health officer is to break the chain in the most economical way and with the least inconvenience to all concerned. It is now considered poor policy for a health officer to forbid things which have merely a slight detrimental effect on health and which interfere with business and eco-

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nomics. As Chapin says, automobiles kill thousands each year but their use is not prohibited. Certain general control measures which are undoubtedly of real value are universally applicable; schools, institutions, military camps, industrial centers, etc. have additional special problems of their own which are not discussed in this study.

Before proceeding to the consideration of the respective communicable diseases, it will be advisable to discuss in a general way some of the most essential of the factors which enter into the problem of control.

EARLY DIAGNOSIS

The early recognition of a communicable disease is one of the most important primary requisites for the application of control measures, but is a problem which is not readily solved. The responsibility for failure to obtain it almost always rests elsewhere than with the practitioner. He is either called late, after infectiousness is over or much diminished or is never called at all. The value of an early diagnosis has been recognized ever since the epidemics of the Middle Ages when all sorts of fantastic devices were invented to detect a case in its incipiency. The ignorance of the public as to the necessity for early isolation may be charged with responsibiilty for the late diagnosis and the consequent prevalence of acute carriers.

ISOLATION

Only a few years ago isolation of the sick was thought to be the means of breaking the infecting chain, thus wholly preventing the spread of communicable disease, since the only way known in which one could become infected was through contact with a sick person. But since then we have learned that isolation of the known sick is comparatively much less important than was thought. Not only are carriers, missed cases, and cases not seen by medical men, far more important as spreaders of disease than the really ill person confined to his bed, but it is recognized that those actually ill enough not to be able to move about probably were in the most infectious stage of the disease for several days before the diagnosis was made, while they were still ambulant. In some few diseases the infectiousness has practically ceased by the time the patient takes to his bed.

Before isolation can control a communicable disease its exact etiology must be known, or at least its precise method of spread, and diagnosis must be absolute. But mistakes are easy in even the commoner diseases, and particularly so where there is no scientific criterion for a diagnosis, as in influenza. Many atypical cases are not recognized, and still more typical ones are never seen by a physician. It has been estimated that less than a third of the cases of measles in Boston are officially known, and that not more than a tenth of the whooping cough in New York City is reported. Nevertheless isolation cannot be abandoned, primarily because it actually does prevent many cases although unsuccessful in stopping epidemics, and secondarily because the public demands a certain amount of it, particularly among the families of neighbors. Under certain circumstances early and effective isolation can prevent an epidemic. In small communities where epidemiological work is more readily done because every one is known and contacts can be traced back, it is often possible to do effective work with isolation if the first two or three cases are found early. Similar work in large cities is impossible, for opportunities for unknown contact infection in crowds are infinitely greater.

In this study the term isolation includes concurrent disinfection of discharges, linen, utensils, etc. The precise disinfection required depends on the disease and a detailed general scheme is impossible. As a general rule nasal and oral secretions should always be burned at least daily, after collection on gauze or paper napkins in a paper bag attached by adhesive to the frame of the bed. A tub of 2% compound cresol, 5% carbolic acid, or 10% formalin should be always available to receive the linen. Hand disinfecting solution and gowns for physician and attendant should always be ready. Two percent. compound cresol or 5% carbolic should be used for feces and urine, to the amount of twice the volume of the material to be disinfected, masses broken up, and the mixture allowed to stand an hour. Eating utensils should be boiled after each use, and be for the individual use of the patient. No food should be returned from the sick room, and the attendant should not handle food for the remainder of the family. Air disinfection is useless, except for insects and rats. Terminal disinfection consists in cleansing mechanically with soap and water, or by air and sunlight.

The procedures described above cannot be followed in the great majority of families. Even where the best trained help is available isolation is probably very seldom perfect; the average is certainly not more than 50 or 60% perfect. The mother of a family in a tenement who can afford no help, even if she is fairly intelligent and willing to coöperate, must necessarily have a very defective technique. Recognizing the inefficiency of the usual isolation there is nothing to do but to be moderate in requirements. The subject cannot be ignored entirely, and absolute quarantine and isolation would neither be effective nor could they be obtained any more than in 1665 in London, when each infected house had a guard, as described by Defoe in "The Journal of the Plague Year." Moderate restriction does some good, and is more likely to be obeyed than more

drastic requirements. It is far better to have all the sick isolated as well as can conveniently be done than to have a few drastically quarantined with the others concealed from the authorities. It is barely possible that isolation which certainly is now being carried out better than in years past has more influence than we think. Methods of travel are now such that there is vastly increased intercommunication and one cannot say that isolation has not tended to counteract an increase in communicable disease which might otherwise have occurred.

Isolation is generally of as much benefit to the patient as to others. If he is restricted, he will generally remain in bed and will have better care. Danger of complications will be lessened. Any sick person should be cared for in a cleanly manner, and particularly those in danger of complications.

Since isolation is of undoubted benefit, it should be carried a step further, that is, all persons afflicted with acute catarrhal symptoms, particularly with the slightest fever, should be isolated at once, without waiting for a diagnosis which often is not possible for several days. This is almost imperative in children, and mothers should isolate them as soon as they even look sick. Until the disease is known not to be contagious, isolation with concurrent disinfection should be carefully carried out and all visitors excluded. Incubationary carriers probably distribute many more pathogenic organisms than do chronic carriers, and the isolation of the former should be a real factor in control. Incubationary carriers with catarrhal symptoms distribute not only the organism which is incubating in them but through their increased sneezing and coughing pass on more readily any other organism they may be carrying. In this connection, another control measure which would undoubtedly lessen the transmission of disease is the boiling of all eating utensils after each use, whether in the home, hospital, or restaurant.

Hospitalization where possible is of advantage, and is essential under certain conditions. Infectious cases in institutions, lodging houses, and hotels have no other satisfactory means of being cared for. As protection to other members of the family, relieving an already overworked mother, and obtaining better nursing and medical service, the hospital is a distinct help. But as was learned in England no amount of hospitalization can prevent epidemics in cities. When a sick child is sent to a hospital, the other children can generally return to school earlier than if the patient remains at home. Separation of the sick child from the well can often be effected with the aid of relatives, and this also operates to release the uninfected children. Some diseases such as typhoid can be far more advantageously treated in hospital, and others such as scarlet fever, diphtheria, pneumonia, and measles are as well off at home.

Placarding of the infected home by the health official has two important effects. It enables those to keep away who wish to avoid unnecessary exposure, and it is of distinct educational value to the public. School authorities warned thus as well as by notification by the health department, that certain homes are infected can take the necessary precautions.

Whenever, through ignorance or wilful disobedience, satisfactory isolation cannot be obtained, or there is neglect in treatment, the health department should have legal authority for "forcible removal," as is the case in Massachusetts.

NOTIFICATION

Each state has laws or regulations requiring the reporting of certain diseases. The diseases specified differ in the various states, but there is a tendency to uniformity in that the model law which has been recommended has been adopted in a number of insantces. When diseases are reported in conformity with the law it becomes the duty of the officials receiving the report to record the data and to act on the information. Unfortunately there is a tendency to regard as foolish, notification of certain diseases like measles, chicken pox, German measles, mumps, pneumonia, and influenza, because the notification does not and cannot yet lead to any immediate effective action. It is insisted by these objectors that physicians will not report more than a small proportion of their cases unless the health department accomplishes something beneficial as a result of the information they receive. Incomplete morbidity figures of this kind are worthless for study, and a health department is merely placed in disrepute as a result, the argument continues.

Notification should be practiced. It is not an old requirement, and morbidity figures are therefore not of much value yet. The procedure should be as simple and informal as possible in order to cause the least possible trouble to the physician. Telephone reports should be encouraged both because the information is more prompt and because it is easier for the physician. A very simple system, such as that of Alabama, described by Maxcy, should be used. It is a duty the physician owes to the state and to his profession to conform to the law by reporting conscientiously all the notifiable diseases he sees. He is not asked to do this for any individual, or for any health department but for the cause of preventive medicine. Prompt notification aids greatly in building up a health department, and it enables educational work to be done, for the health department should immediately send a representative to the home to give necessary instructions and help, repeating the visit as often as possible or necessary.

The more complete the reporting the more intelligent the work of the health department. If, in small communities, notification is prompt, active measures will often prevent epidemics. If there is no local health department reports should be made to the State Board, for if no cases are ever reported from a community its "city fathers" will never see the need for a health department for they will not know of the preventable illness that exists. Suspicious water supplies have often failed of purification because "no epidemics were ever traced to it." If the physician fails to report his cases because of an inefficient health department, he is in error. There is then increased need for reporting so that when it is necessary for the State Board to step in and help he can give his hearty coöperation with a clear conscience.

Morbidity figures have a certain statistical value if they are accurate. The value of census reports of population and mortality are conceded to be important, and sickness records are even more valuable for, as Wilson says, we can die but once and can get sick many times. Study of good morbidity figures assists in finding means for prevention of illness. Each disease on the list is there for some particular reason. In many of these diseases we need more knowledge as to seasonal prevalence, geographic distribution, age, sex, etc. in order to obtain data for study. In certain diseases like tetanus control measures consist largely in getting data as to prevalence which may then be used for legislative or administrative purposes. Possibly the most beneficial use for reports of new cases is that advocated by Hill, namely to study the distribution of cases as they develop and when these are seen to group themselves, look there for a carrier.

TRANSMISSION

The reservoir for the infectious agent of almost all the communicable diseases is man himself, and even in plague, once an epidemic starts, the infection may be conveyed directly, from man to man. As Hill says, transmission is accomplished, with a few exceptions, by the route that infected body discharges take from the patient or carrier to the uninfected individual. He believes that 99% of infections are accounted for in that way, and that the other 1% would not take place if the 99% were prevented. The problem is then to find and control those individuals who make up the reservoir.

Very few pathogenic organisms are able to exist any length of time outside the body under ordinary conditions. They find their ideal conditions for development in the human body. Certain pathogens live as well in the animal body, but as the diseases caused by them play a minor rôle, they are ignored in this general discussion. After development in the human body these pathogens then leave the body in the discharges from the main orifices. These discharges then reach the mouth, nose, or eyes of uninfected persons. Infection through fomites takes place only when the latter have been freshly contaminated. Direct and indirect contact are spoken of but no sharp line can be drawn between them. The discharges may reach an uninfected person directly or through the famous "food, fingers, and flies" which may obtain the virus either directly or from recently infected fomites. The prevention of contact infection is not in sight, first because there are no practical ways of locating all carriers and missed cases, and second because only a thorough education of the public with a conscientious universal observance of the principles of cleanliness thus learned can stop the almost ubiquitous interchange of discharges. Overcrowding vastly increases the chances for this exchange of excreta, and thus favors epidemics. But there is some unknown law of nature which is the most important factor in transmission.

A century ago it was shown by military surgeons in the Napoleonic Wars that the boiling of eating utensils was an efficient preventive of diseases of the upper respiratory tract. Cummings and Lynch demonstrated that fact again during the late war, and now its importance is generally recognized:

City schools are not a factor in the spread of disease, but this is not true in rural districts where children who would not otherwise meet are brought together in schools. The closure of city schools results in more intimate contact of the children on the streets, for while at school they are kept at a certain distance from each other. Chapin has made statistical studies as to this point and has found that diphtheria epidemics may start before school opens and persist after closure. He is not certain that the transmission of measles is not aided by the schools, but thinks no other disease is appreciably influenced in this way.

On the other hand, schools may be made a direct aid in the campaign against communicable disease. There should be a daily medical inspection during times of unusual prevalence of disease, and any child with catarrhal symptoms sent home, with prompt direct notification of that fact to the health department. The teacher should always be on the watch for such children and send them home as soon as they appear not to be well. In fact a teacher who has been properly instructed and is observant may be of far more practical value in school inspection work than the occasional inspection by a medical man. The aid given by the schools in the efforts to educate the public how to conquer the communicable diseases will be considered in a later paragraph.

Exclusion from school of children from infected families should not be a drastic measure.

There is here an excellent opportunity to be lenient and thus please the family without detriment to the cause of preventive medicine. It will frequently be possible to supervise and inspect well contacts daily, and to permit them to attend school. Absolute or even relative prevention of transmission by children who are contacts is impossible, for children are naturally uncleanly. So the health department can well afford to adopt a liberal attitude. Boarding schools with well equipped hospital or isolation facilities and with daily medical inspections are much better kept in operation than closed with consequent spread of a number of foci of infection. School authorities should be kept informed by the health department as to the families or homes infected, so that children from such families may be kept under supervision and excluded if necessary. Contact children who have been shown by health department records to be immune are of course not excluded, and this has a decidedly encouraging effect on notification. When schools are kept open it is sometimes possible to locate dangerous carriers who would have otherwise escaped detection.

Funeral restrictions are always a source of discontent, and there is really no reason for them. Any non-immune members of the family should be excluded from the home or church during the service and then no appreciable risk of transmitting the disease to others is run.

Crowding, whether in public conveyances, public gatherings, or in dwelling places is one of the best means of conveying pathogenic organisms. Multiple exchanges of the flora of the upper respiratory tract are facilitated by droplets expelled in sneezing, and coughing, and by saliva smeared over articles frequently touched by many. This furnishes ideal conditions for these bacteria.

CARRIERS

Carriers may be temporary or permanent. The former include incubationary carriers, convalescent carriers, the recognized case, and the missed, atypical, and concealed cases. The healthy carrier who may be an unknown convalescent from a missed case, may also be a temporary one. Permanent carriers are convalescent carriers who have persisted as such during the arbitrarily adopted period of three months. Healthy carriers in whom the disease is present but unsuspected may also become chronic carriers, and they are the ones most difficult to locate.

Carriers have not been recognized as important until about a decade ago because neither their existence nor their numbers were more than suspected, and that by a very few. Defoe in his "Journal of the Plague Year" states that "the Infection was propagated insensibly and by such persons as were not visibly infected who neither knew who they infected or who they were infected by." There are very few diseases in which carriers are not important factors in transmission. So far as is known chronic carriers play no part in the transmission of measles or of small pox, but they are especially important in the typhoid fevers, diphtheria, and meningitis. Active immunization against diphtheria and typhoid permits protected individuals to become carriers without menace to themselves. But, as McLaughlin says, this is no argument against immunization, which is available to all.

Incubationary carriers are probably most dangerous because of the very rapid increase of the organisms during that period. Convalescent carriers should theoretically all be known, but of course are not. Many cases are not seen by a physician, either because they are ambulant or because the family did not desire or could not afford a physician; such cases and cases wrongly diagnosed are potent factors in transmitting infections. How to guard against such carriers is difficult to understand except in the Utopian condition of an educated public. In such diseases as meningitis, influenza, and measles (the latter incubationary), the carrier problem is so vital that it overshadows every other consideration. Each large city contains hundreds of carriers of virulent disease germs only a small proportion of whom are ever found. And when they are found there is the problem of what to do with them. It is not possible to restrain them, but they should certainly be registered, and required to report at semi-annual intervals. Certain occupations, particularly handling food, should be prohibited. In certain diseases other occupations such as barber, beauty parlor operator, etc. must also be on the prohibited list.

RELATION OF THE PHYSICIAN TO THE HEALTH DEPARTMENT

No health department can succeed in its functions without the hearty coöperation of the practicing physicians, each of whom should feel that he is virtually an assistant health officer. There is no profession which is so altruistic as the medical profession but many practitioners feel that there is more or less overreaching on the part of the health department and therefore are not inclined to give it their hearty support. Preventive medicine is growing rapidly and is becoming more and more associated with sociological problems. The thinking physician who studies his patient is also gradually extending his field, and is certain to come in contact with other than strictly therapeutic agencies. Sooner or later he must realize that the interests of his profession are closely associated with such broad problems as the public health.

The attending physician is much better able to secure good concurrent disinfection than is the health department. He visits the patient

much more frequently than the health department's representative can hope to do, and by virtue of being a physician is more able to give tactful advice and instructions than the non-medical representative. There is no other way to inform those infected with venereal diseases how to refrain from infecting others than by the advice of the attending physician or by printed advice given the patient by the physician supplemented with a few words to accentuate the written instructions. The practicing physician owes it as an important duty to his profession, to humanity and to the state to report his notifiable cases and particularly the victims of venereal disease who neglect treatment. He may do much to aid the cause of preventive medicine in specific instances by urging immunizations against small pox, typhoid, and diphtheria, as well as generally, by his coöperative attitude.

(To be continued)

MEDICAL PROGRESS

PROGRESS IN NEUROLOGY—1925

BY ABRAHAM MYERSON, M.D.

WHILE the number of investigations in the field of neurology has been at least up to former levels, there have been no outstanding discoveries, and the development of no new and outstanding techniques in any of the fields of this branch of medicine. There has rather been an accumulation of data tending, on the whole, toward progress. The subject matter covered by this year's writings is too vast and, in part, too theoretical to be reviewed for a general medical public. I have, therefore, selected from the work of the year a few topics of outstanding clinical importance.

CEREBROSPINAL FLUID

There are two main theories as to the production of the cerebrospinal fluid. The one theory, which is on the whole the more widely accepted, believes it to originate in the choroid plexus, as a sort of secretion, thereby placing the choroid plexus in the class of glandular structures. This first theory is held, practically speaking, by all the neuro-surgeons and a great many of the physiologists. On the other hand, a theory sponsored largely by the work of Mestrezat, states that the spinal fluid is a dialysis in which the blood vessels on the one hand, and the spinal fluid spaces on the other, are separated by a membrane, the choroid plexus, and that osmotic pressure and similar physico-chemical phenomena are responsible for the spinal fluid. The investigators who formulated this theory point out that practically speaking all substances found in the blood are found in the spinal fluid, and no substances are found in the spinal fluid which are not found in the blood. The glandular theory has been reviewed at length by Walter Hughson (*Arch. of Neur. and Psy.*, Aug., 1925).

The work of Walter, Fr. K. (*Zeitschr. f. d. ges. Neurol. u. Psy.* 1925; 95; 522) points to a different conclusion. By the ingestion of bromides, he shows that the amount of a substance found in the spinal fluid after ingestion is related to the amount ingested. The only relationship exists between the relative concentration in blood and spinal fluid. If a patient takes 3 cg. of sodium bromide by mouth, per pound of weight, for 5 days, there is 3 times as much bromide in the blood as in the spinal fluid. In certain diseases, the barrier permits less substances to go through, and in others more. In meningitis there is an increased permeability, so that relatively more of the substance appears in the spinal fluid. He believes that the permeability is conditioned by two factors, first, a physico-chemical (osmotic), the other biological or selective. The biological factors are caused by toxic or inflammatory alterations of the barrier. The permeability is a specific function of the barrier which, however, is unrelated to other functions.

Schönfield and Leipold (*Zeitschr. f. d. ges. Neur. u. Psy.;* 1925; 95; 473) also corroborate the opinion of Walter that the inflammatory meninges are more permeable than the normal ones. They believe that the substances pass more readily after intramuscular injection than by intravenous injection. Using uranin and äsculin, they found that substances pass readily into the spinal fluid in 1½ to 2 minutes, and that the process is a simple ultrafiltration through the blood vessel walls, and into the spinal fluid. In patients who have increased protein and increased cell counts, the substances pass more readily into the spinal fluid.

Nishimura, K. (*Proceedings Soc. Exp. Biol. & Med.;* 1925; 22; 322) studying the lactic acid content of the spinal fluid, shows that the difference between the blood content and the spinal fluid content is greater in meningitis than in other diseases.

Wilcox and collaborators (*Am. Journ. Dis. Children;* 1925; 30; 513) working on the chemistry of the spinal fluid, state that the importance of the spinal fluid sugar lies in its rela-

tionship to the blood sugar content. In general, the spinal fluid sugar is from 40 to 60 per cent. of the blood sugar. There are high relative values in encephalitis meningismus, convulsions, acidosis, and nephritis, but also, they state, a high relative value in some normals. (The reviewer does not think they have enough cases to substantiate clearly any such conclusions. There is a low relative value in tubercular meningitis and in acute meningitis, and this seems to be the one fact about spinal fluid sugar which at present is not controversial and is of diagnostic importance.)

Fremont-Smith and Dailey (*Arch. Neur. & Psy.;* Vol. 14, 3, Sept., 1925) agree with the statement that the value of the spinal fluid sugar is based upon its relationship to the blood sugar. Fremont-Smith and Dailey state that sugar values of the spinal fluid below 50 mgms. nearly always indicate an acute infection of the meninges.

Goodwin and Shelley (*Arch. of Internal Med.;* 1925; 35; 242-258) emphasize this fact, and it stands out as the one fact agreed upon by all the writers. That there is a high sugar value in encephalitis in many instances is associated by all the writers, but that other diseases may have as high a value and in encephalitis one may find a lesser value is conceded. As a differential between encephalitis and meningitis, spinal fluid sugar would seem to be of value, especially in the early stages of meningitis and in those types of encephalitis in which there is some degree of rigidity of neck and an approach to the kernig sign.

Ayer and Solomon (*Arch. of Neur. and Psy.;* Sept., 1925) point out that the spinal fluid differs in different localities. The pressure is similar in all, and the main reactions of the spinal fluid differ but slightly from one place to another. The total protein content differs somewhat, the greatest amount appearing in the lumbar fluid, next in the cisternal fluid, and the least of all in the ventricular fluid. The reverse condition obtains in relationship to the sugar concentration. In diseased conditions, there seem to be differences of irregular type. The important point about this paper is that spinal fluid obtainable from various localities differs in the information given, and it requires frequently the combined information to get an accurate picture of the pathological process. Therapeutical substances may be of no value, or of little value, introduced in the lumbar region, but the routes through the cistern and the ventricles may be accessible and of therapeutic value.

The American writers have paid considerable attention to reduction of increased intracranial pressure. Increased intracranial pressure occurs in brain tumor, acute inflammatory diseases, especially with much exudate in the meninges, in traumatic states where there is increased production of the spinal fluid and general swelling of brain tissues, and is especially prominent in middle meningeal hemorrhage, after fracture of the skull, as well as in the intracerebral hemorrhages which may occur in generalized head trauma. Since the intracranial pressure is in itself a source of danger, methods of combating it have been described. The trephine is, of course, a method to be used in neoplasms, and appropriate surgical procedures are to be followed where there is some definite focal surgical condition, such as the middle meningeal hemorrhage. In the case of brain swelling following trauma, and in the course of the acute infectious diseases, the trephine is not indicated, and the lumbar puncture has been used for some time as the direct weapon of attack, and at the present time is undoubtedly the most generally useful technique and to be followed except where definitely contraindicated, as when there is neoplasm below the tentorium cerebellae.

In recent years, as is well known, the use of hypertonic solutions, growing out of the work of the physiologists, has become quite extensive since the work of Haden, Cushing, Sachs, Foley, Dowman, Fay, and others. Howe (*Arch. Neur. and Psy.;* Sept., 1925) has tried out the various hypertonic solutions used, and comes to the conclusion that sodium chloride produces the most pronounced decrease in intracranial pressure of any substance used, but it is toxic unless administered very slowly. Furthermore, it is later mobilized in the tissues, producing a secondary wave of edemia, as shown by Fay, and is considered unfit for general clinical administration. Dextrose is the only substance of this group which is non-toxic and produces a satisfactory fall in intracranial pressure. In this he is corroborated by M. M. Peat (*Jour. A. M. A.;* June 27, 1925).

In and around Boston, the use of magnesium sulphate, par rectum, for the production of intracranial pressure has been extensively advocated. It is interesting to notice in this connection Morrissey's results (*Arch. Surgery;* 1925; II, 778-789). He states that 45 gs. of magnesium sulphate crystals by mouth does not cause a drop in cerebrospinal fluid pressure in two hours. A slight fall in intracranial pressure was noted in a few animals over a fairly long period of observation. Apparently, brain volume is not changed in forty minutes, following the injection of a large amount of magnesium sulphate into the small intestines. Cerebral dehydration is probably accomplished to a very slight extent by magnesium sulphate, but the effect of this drug is inadequate and should not seriously be relied on for the reduction of intracranial pressure.

In the experience of the reviewer, the very best treatment for intracranial pressure is by directly removing cerebrospinal fluid, generally

speaking, by the lumbar puncture route, although the other routes may be used. There is no particular harm in doing two or more punctures a day, under the ordinary circumstances of increased pressure.

The use of lipiodol for diagnostic purposes continues, and is unquestionably a very useful addition to the localization of spinal cord tumors. This procedure was described in last year's review, and, briefly, consists in the injection of iodine in oily solution through the cistern route. The lipiodol drops to the lumbar sac unless obstructed by something which encroaches on the subarachnoid space. X-ray then reveals the position of the iodized oil, and the localization of the blocking growth can be readily seen. The French writers uniformly approve of the method, and cite, in many articles in the *Revue Neurologique* and other journals, cases diagnosed and treated with success after the use of this method. The German writers, while laying stress on its value, point out also some of the dangers in the fact that the iodine and oil may set up inflammation, and become part of an inflammatory tissue reaction (Albrecht—*Zentralb. f. d. ges. Neur. u. Psy.;* 1925; 41; 921). (The Germans discuss this technique under the name of the modification used, "iodipin.") Krause, in the discussion of Albrecht's paper, does not agree that the use of this method is without danger. Mixter (*Arch. Neur. and Psy.;* 1925; 13; July) believes that where there is no evidence of block by the combined cistern and lumbar puncture method, there is no use in the lipiodol. A sharply defined level by neurological methods also makes lipiodol rather useless. Where there is evidence of block, and where the level cannot be established by neurological methods, the lipiodol is of great value. Mixter believes that by combining the use of the double puncture to demonstrate block and the use of lipiodol to demonstrate the level of block, one has increased the chances for correct diagnosis of spinal cord tumors. Dandy tends to corroborate this (*Arch. Surgery;* Nov. 1925).

There can be no question that the technique of Sicard and Forrestier is a valuable addition to the diagnosis of cord tumor, chronic pachymeningitis and all pathological changes in the spinal cord and adnexa which obstruct the spinal fluid spaces. It should not be forgotten that the procedure has some dangers, and it should not be used indiscriminately. It is an aid to neurological diagnosis, and not a substitute for careful clinical study.

A very complete review of the radiotherapy of tumors of the brain is made by Gabriele Levy (*Revue Neuroligique;* 1925; II; 550). Excluding gummas, tuberculosis, superficial tumors, and calcareous or bony growths, this author believes that there is a field for the use of radium and X-rays in the case of the cerebral tumors, and in particular the gliomas, the intraventricular tumors, and all those types of tumors inaccessible for surgery. Particularly do the tumors of the hypophysis yield to the use of radio therapy. If there is no choking of the discs, the X-ray can be used in small doses and controlled by neurological examinations during the course of the treatment. If, during the course of the treatment, choked disc appears, the doses should be diminished, or the treatment even suspended. If there is evidence of hypertension, increased intracranial pressure, and if the choked disc present is not menacing, one can use the radiotherapy, but with the greatest caution and with readiness to resort to trephining if the symptoms increase. If there are signs of localization, it is well to center the rays on the site of the neoplasm; if there do not exist signs of localization, one may treat the skull in toto, by successive fields, but always with great care. There is no way of judging complete cure by radiotherapy; the clinical improvement is the only guide.

In the diagnosis of brain tumor, the observation of Naffziger, H.C. (*Surg. Gyn. Obst.;* 1925; 40; 481) that the pineal gland is so situated that it is shifted to one side by a neoplasm, is of value. In 50% of normal adults, the gland is calcified and this makes it possible to locate its position by X-ray. If a new growth takes place above the tentorium and the pineal gland is calcified, the increased bulk of the neoplastic side of the brain pushes the pineal gland to the side opposite the lesion, a fact easily shown in lateral views of the skull. Where the pineal gland remains in the middle with increased intracranial pressure, there is, according to Naffziger, internal hydrocephalus.

THE TREATMENT OF GENERAL PARESIS BY THE MALARIAL METHOD

General paresis has engrossed the attention of neurologists and psychiatrists for the past few years, and especially has the therapeutic problem become a focus of activity since the introduction by Wagner-Jauregg of the malarial infection treatment. It is profitable to review the historical phases of the paretic problem in order to understand the present situation.

At first, general paresis was part of the fused, undifferentiated mass of nervous and mental diseases. Gradually it became isolated, and, by the middle of the last century, its consideration as an entity was part of the working knowledge of neurology. Its relation to syphilis became definite much later, at first through the clinical insight of Fournier and Erb, and later was definitely established by the Wassermann and the spinal fluid. Its neuropathology received its greatest emphasis and differentiation especially through the work of Nissl, Alzheimer, and the crowning piece of work by which its syphilitic

origin was established was the discovery of the spirocheta pallida in the brains of paretics by Noguchi and Moore.

Meanwhile, therapeutics lagged. The belief entertained by all medical men up to 20 years ago was that general paresis was a hopeless disease, and that death occurred within a few years. Gradually it became possible to diagnose paresis long before the characteristic mental signs appeared, and with that, the treatment of the disease, carried on sporadically before, became systematic, energetic and hopeful.

The discovery of Salvarsan made the first real break into the therapeutic nihilism. Though Ehrlich rather discouraged its use in parenchymatous brain syphilis, it was used, and enough results were obtained, much over-stressed as they were, to bring encouragement. Then the method of Swift-Ellis entered the field, and salvarsanized serum and introspinal therapy became a medical vogue which, however disappointing it has been to those who followed it, nevertheless contributed to the study of the disease and the spinal fluid, and did operate to alter the therapeutic nihilism prevailing. Spinal fluid drainage, intraventricular treatment, the use of tryparsamide, all these were part of the therapeutic wave which broke against the problem of general paresis.

Meanwhile, in Germany, a new line of therapeutic attack was evolved, mainly by Wagner-Jauregg, the now familiar malarial injection treatment, which was discussed in last year's review. Starting many years ago with the use of vaccines, proteins and such preparations, the familiar observation that infections often mitigated psychiatric diseases and the observation or belief that soldiers of malarial countries, though infected with syphilis, did not develop general paresis, led Wagner-Jauregg to the use of malaria in the treatment of brain syphilis. Though the basis of the treatment is obscure, the results reported demand our attention.

Nonne states that never in his vast experience has he seen such results, with over 20 per cent. of remissions and apparent cures.

I select, out of the mass of publications dealing with this, a typical paper by Weygandt (*Zeits. f. d. ges. Neur. u. Psy.;* 1925; 96; 1-50). He gives an elaborate review of the work done up to date, on the whole approves of the method and believes that the number of cases bettered decidedly exceeds the normal percentage of remission. He warns us that the method is not without serious dangers, that death occurs and a decided anaemia is a common aftermath. His paper shows sections of the brains of treated patients who died of other conditions (aneurysm) and there seems to be a definite betterment in so far as the usual infiltrative inflammatory picture is concerned. The serological-spinal fluid picture does not alter pari passu with the clinical changes, a fact which has been noted with every form of treatment.

Weygandt emphasizes the value of supportive treatment between, or after the courses of malarial treatment, and lauds the uses of the various forms of salvarsan therapy (particularly intraspinal and spinal fluid drainage methods). This author also discusses the Plant Steiner method of treating paresis with intermittent fever. It is claimed to be milder in its effects and to give as good results.

Kolb (*Zeits. f. d. ges. Neur. u. Psy.;* 1925, 96, 74) in an elaborate statistical analysis of the international figures of general paresis, reaches some interesting conclusions. He says that there has been an undoubted increase in the number of cases of general paresis, an increase much greater than the increase of syphilis itself. (This increase is not, however, present in the United States, Italy and the Netherlands). Especially in France, the Latin Americas, and the Asiatic countries has there been a decided increase. Therefore, Kolb states that, in addition to the known syphilis factor, there is the unknown factor (Y) which brings about the pathological process of general paresis. Kolb, like many other observers, believes that the cases with severe cutaneous manifestations (dermatrophic manifestations) do not develop the brain or neurotropic manifestations. The dermatrophic cases, which prevail especially in the non-European races, are easily treated, the neurotropic cases, especially common in the Western world, are not easily handled. Working on the basis of the validity of the malarial treatment, and the observation that there is a great prevalence of fever in the countries where paresis occurs but seldom, "we must conclude that intercurrent hyperpyretic diseases may change the course of the neurotropic type into the dermatrophic type." Thus, "the mortality from general paresis of a country will be the less the more those infected with syphilis suffer from high fever."

For Nonne (*Zeits. f. d. ges. Neur. u. Psy.;* 1925, 95; 135) a different explanation appears. Dividing syphilis of the C. N. S. into two types, the mesodermatic (a meningovascular, cerebrospinal syphilis) and estodermic or true nervous syphilis (parenchymatous, general paresis, tabes dorsalis), he postulates certain essential differences in response to treatment and in course. The mesodermic type tends to be progressive, appears early, but readily responds to treatment. The estodermic type appears late, is often stationary and irregular in course, and resists treatment. Nonne cites with approval the writings of Lyden, Schuster, Finger, Herxheimer, Marburg and others that the use of Salvarsan *has increased the amount of real neurosyphilis (i. e. the estodermic neurosyphilis)*, and it is to be inferred from his statement that salvarsan increases neurosyphilis by making less common

the skin manifestations. It is to be kept strictly in mind that Nonne's strictures against Salvarsan apply only to its effects on the production of true neurosyphilis (tabes and paresis).

It has been assumed that the spinal fluid in general paresis is non-infective. This belief is contradicted by H. Hoff and E. Pollak (*Zeits. f. d. ges. Neur. u. Psy.*, 1925; 95; 50). Using the spinal fluid of paretics for ingredin under the dura of guinea pigs, they watched the change of normal guinea pig spinal fluid, by repeated examinations, into fluids closely resembling that of general paresis in the human, and by autopsies, they show that severe alteration of the nervous system of the meningo-encephalitic type occurs. They conclude that the spinal fluid must be considered as a very active factor in the disease process of general paresis. They believe that the spirochete is present in the spinal fluid much more frequently than is usually supposed, and that also a toxic factor of importance is operating therein.

ENCEPHALITIS

Epidemic encephalitis still continues to be a mystery as to cause. That the virus found in certain types of Herpes causes, in rabbits, changes resembling encephalitis has brought Herpes into consideration as a minor manifestation of the effects of the same organism or group of organisms causing encephalitis. (See Goodpasture, *Am. J. Path.*, 1925, 4 papers. Flexnor et al., *J. Exp. Med.* 41, 233, 244.) That encephalitis is both more common and more disastrous in its sequelae than has hitherto been supposed, especially in children, is now quite certain. A symposium reported in the Proceedings of the Royal Society of Medicine (1925, 18, 17) brings this out very clearly. The types of sequelae of major importance are, first, the well known, so-called lenticular syndrome which resembles paralysis agitans in its main symptomatology, is probably due to the involvement of the substantia nigra, as well as the Lenticular Nucleus, and is a disease fundamentally of extrapyramidal pathways. Second, a variable, but large percentage of children show as a sequel what is known as the "apache" personality. Change in character observed in hitherto normal children is very striking. They become undisciplinable, completely egoistic, destructive, cruel and violent, and often enter into a career of crime. Third, a certain variable but fairly large percentage of children become definitely mentally defective. Undoubtedly, this accounts for much more of mental defect than has hitherto been supposed, since encephalitis in children is often without striking symptomatology. A personal research carried on by the reviewer in the past year confirms the statements of the British writers on this point.

Thus far the treatment both of encephalitis and its sequelae is very unsatisfactory. The repeated lumbar puncture in the acute phases seems to be the only definite therapeutic measure we have. With the establishment of the sequelae, many things have been tried, acreflavan, autoserum, hyoscin hydrobromide, etc. Now and then a writer (Strecker & Wiley—Paulian, Marinesco) cites a startling cure by himself with one of the various substances used, but it usually remains unconfirmed by others, and is probably coincidental and accidental. The belief is appearing in the literature that we deal with chronic encephalitis rather than sequelae in many instances. In other words, that the virus is still active in somewhat attenuated form, very much as neurosyphilis is a manifestation of syphilis rather than a sequel.

BIRTH TRAUMA

Rather disconcerting are the recent articles by Sharpe in the United States (Sharpe and Maclaire, *Surg., Gyn., Obst.*, 1925, Nov.) and Ulrich, O. (*Zeits. f. Kinderheilk. b.;* 39; 2; 245). Somewhere from 15 to 20 per cent of apparently normal children show bloody spinal fluid, indicating a hemorrhage into the cerebrospinal spaces, usually believed to be into the subarachnoid spaces. When one adds to this fact that a good deal of brain injury would not show up as blood in the spinal fluid, and especially if it were of the very important intracerebral type, the role of birth trauma becomes hugely important as, at least, a hypothesis explaining a good deal of sporadic feeble-mindedness and epilepsy.

EPILEPSY

In respect to this important subject, I cite from some references given to me by William G. Lennox of the Harvard Department of Neuropathology and Boston City Hospital, Department of Nervous Diseases, who is, as is well known, making a diligent and brilliant study of epilepsy. Dandy (*Johns Hopkins Buletin,* Vol. 36, page 40, Jan. 1925) found that rabbits which had had brain lesions weeks or months previously were three times as susceptible to camphor convulsions as normal rabbits. Peterman (*Journal Am. Med. Assn.*, Vol. 84, 1979) deals with the ketogenic diet which is an effort to bring about by an unbalanced diet a condition bordering on acidosis. The results look encouraging, but his observations are not backed up by laboratory studies. Hamilton (*Journal of Biological Chemistry,* Vol. 65; 101) found no changes biochemically in the blood and spinal fluids of ten epileptics. Schou and Stubbe (*Zentralb. f. d. ges. Neur. u. Psy.*, 41; 243) using the hunger cure, showed what has been well established, that accompanying the acidosis which results from fasting, the attacks disappear. They believe that in status of epilepticus this treatment is of great value. (It is difficult for the reviewer to agree with this last statement in as much as people having status epilepticus are unable to take any food, and, nevertheless, continue to have repeated convulsions. In status epilepticus the best treatment, in the reviewer's opinion, is the

use of ether or chloroform, and thus forcibly to abolish the attacks.)

Meanwhile, it may be said that the conception of heredity as a cause of epilepsy is gradually disappearing from the literature, and that accurate clinical and biochemical study show that epilepsy is a disorder of the organism of an organic type, and it may be confidently predicted that we are on the threshold not only of understanding this very common and serious condition, but are also developing lines of therapeutic attack.

SYMPATHECTOMY

Sympathectomy and the autonomic nervous system are commencing to engross the attention of clinicians and physiologists. The hope that by sympathectomy certain types of spastic paralyses are benefited has been rather rudely disturbed at the present time. The reports of Royle aroused an optimism which, at the present writing, has not been justified. A typical report disturbing this optimism is by Kanavel, Pollock and Davis (*Arch. Neur. and Psy.* 13; 197). They did not find that the removal of the sympathetic had any appreciable effect on the normal muscle tone of cats. Their clinical experiments on cases of post encephalitis paralysis agitans, true paralysis agitans, lateral sclerosis, cerebral hemiplegia, Little's Disease, spastic paraplegia of traumatic origin, showed practically no change following sympathectomies.

Meanwhile, a very vigorous controversy is raging over the relation of the sympathetic to muscle tone. The reader is referred to the article by Stanley Cobb (*Physiol. Rev.* 1925, 5, 4, Oct.) which gives the pros and cons of this intricate subject.

An interesting paper on the pathological anatomy of the sympathetic nervous system has been contributed by Staemmler (*Deutschr. med. Wochenschr.* 51; 603). Though there have been many studies of the physiology of the sympathetic, very few articles have been contributed to its pathological anatomy. Very few pathologists including in this the neuropathologists, make a routine study of the ganglia in the abdomen or elsewhere. Staemmler finds in acute infectious diseases many signs of acute alteration in sympathetic ganglia, from the degeneration of ganglion cells to complete neucrosis. Very often there exists inflammatory reaction of the perivascular connective tissue. Similar findings are observable in angina, Raynaud's Disease, etc. In arteriosclerosis, one finds in the sympathetic ganglia signs of a chronic indurative process, *apparently of infectious origin.* The author believes that the changes found in the ganglion cells are the etiological factors behind arteriosclerosis. The chronic ganglion cell changes are probably due to repeated infections and intoxications.

The reviewer wishes to state that in a personal study, carried on several years ago and published, he found similar situations, and strongly urges that it is time that neuropathologists and general pathologists include the sympathetic and autonomic nervous system in their routine studies.

The study of the relationship of blood diseases to diseases of the nervous system has received impetus through the establishment of the relationship of pernicious anaemia to chronic degenerative changes in the cord. Hirst has been the principal proponent of the belief that combined scleroses of the cord are due primarily to chronic changes in the gastrointestinal tract and the establishment of pernicious anaemia (*Proc. Royal Society Med.* 25, 18; section on Nervous Diseases, page 25). McBride and others in the discussion, attacked the views of Hirst. Nevertheless, whether or not the complete views of Hirst be accepted, it is certain that pernicious anaemia is a distinct factor in cord degenerations and the experience of the nervous department at the Boston City Hospital on the whole confirms this point of view.

POLYCYTHAEMIA AND NERVOUS DISEASES

Kurt Mendel (*Zentralb. f. d. ges. Neur. u. Psych.* 41; 513) discusses the relation of polycythaemia to nervous symptoms. Headache, dizziness, visual scotoma and blindness, migraine attacks, Ménière syndrome, and psychic disturbances of all types are found in polycythaemia. One also finds objective signs of various kinds: Hemiplegia, bilateral posterior column symptoms resembling the changes of tabes. The spinal fluid often shows a high increase in pressure; eye signs are also present such as papilledema, optic neuritis, muscle paralysis. This article is a very thorough study of the situation both from the historical point of view and from the presentation of the clinical material. It emphasizes the value of a complete study of the blood in neurological situations of obscure type.

A very curious contribution has been made by Rossett (*Arch. Neurol. and Psych.* 1925, 13, 190). Following along the clue found in tetany that hyperpnea plays a role in the symptomatology, he experimented with excessive deep breathing over a prolonged period of time on various types of patients. If his findings are confirmed by others, a very interesting differential sign between intramedullary and extramedullary tumors has been discovered. A patient with *intra*medullary disease, upon hyperventilation of the lungs, according to Rossett, develops myoclonic symptoms, usually in the muscles innervated below the cord lesion. In patients with *extra*medullary tumor or disease, that is, when the pressure on the cord is exerted from without, irregular twitchings and tremors appear, more or less generalized throughout the body. The mechanism of such a contrast cannot be explained and the findings need confirmation before they can be accepted as of value in determining the type of cord lesion.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12301

SEPTIC TEMPERATURE, CAUSE UNKNOWN

MEDICAL DEPARTMENT

A pupil nurse twenty-one years old was in the hospital eleven days with an attack of influenza during an epidemic of that disease. The visiting physician was suspicious of a small patch at the inferior angle of the left scapula. Heart examination at this time showed normal sounds and action. The apex impulse was not seen or felt. There were no murmurs, thrills or enlargement.

April 27, seven years later, she entered another hospital. She gave a history of a low grade "rheumatism" when she was ten years old, three or four attacks of tonsillitis before she was eighteen, and diphtheria and scarlet fever as well as influenza during her hospital training. Since her graduation six years ago she had worked only a few months at a time, resting in the intervals. Her weight had fallen rather suddenly from 140-150 pounds to 108-118. Two years before this admission her appendix was removed.

In January, five months before this admission, she had pain in the lower left chest lasting three days. She worked for a week, then developed phlebitis of the right leg, then of the left leg, confining her to bed for seven weeks. After four weeks she was up and about. Ten days before admission she "caught cold," and since that time had had fever, persistent cough, pain in the region of the apex of the left lung, and for two or three days acute pain in the posterior aspect of the left hip. She had two or three attacks of transitory aphasia. The first was associated with marked headache, the second with generalized numbness during which she did not know what she was doing.

Examination showed the heart apex in the fourth space just outside the nipple line. No enlargement was made out to the right. The first sound was reduplicated. There was a short rough late systolic murmur. The pulmonic second sound was accentuated. There was tympany in the left axilla, dullness to flatness with absent sounds at the left base, slight dullness with diminished breathing at the right base. X-ray showed a moderately high diaphragm. The heart was increased slightly to the left. There was tenderness over the left base and considerable peribronchial density and hilus thickening on the right, especially of the lower part of the hilus.

She developed acute arthritis in the left foot and leg and the right hand. There was a steady increase in the cardiac murmur, which at discharge largely replaced the first sound. This murmur was heard posteriorly and even in the right chest anteriorly and posteriorly. There was a persistent temperature. Salicylates were only fairly well tolerated (nausea and tinnitus), and had no marked effect except possibly in the suppression of the acute arthritis.

May 21 she was transferred to the Massachusetts General Hospital. The chief complaints were weakness, cough, shortness of breath and pains in the legs. In addition to the history already given she said that after her attack of scarlet fever she had two or three attacks of rapid respiration and pulse and fever (103°) lasting a day or two. The winter before admission she had frequent night sweats.

The previous September she began to have vague joint pains partially relieved by salicylates. She was on night duty, and her general condition went down perceptibly during the next three months. Early in January she began to have rather acute pain in the ankle joints, spreading to the knees. After taking salicylates for a few days she gave up and went to bed. In a few days she developed bilateral femoral phlebitis. Then followed the history already given at the other hospital. For the past three weeks she had had dyspnea unless she was propped up at an angle of forty-five degrees or more. For several weeks she had noticed small red spots appearing every few days on her palms and fingers, disappearing after a few hours. During the past few weeks the sharp pain at the base had moved up into the supraclavicular region, shoulder and neck, less on the left. For ten days she had had much discomfort again from joint pain, chiefly in the groin. She had been taking salicylates gr. x every three hours for several weeks.

Examination showed a pale, thin, but not especially undernourished girl, looking sick. The throat was slightly red. There was one small red spot on the soft palate. The lungs showed bronchovesicular breathing and increased voice sounds, non-persistent râles and slight dullness at the right apex. The apex impulse of the heart was felt 11 cm. from midline, coinciding with the left border of dullness. The midclavicular line is not recorded. The right border was 4.5 cm., the supracardiac dullness 6.5. The pulmonic second sound was reduplicated and markedly accentuated. The aortic second sound was present. There was a harsh systolic mur-

mur at the apex, heard all over the precordia and back. There was a soft diastolic swish at the apex. The area of splenic dullness was increased. The spleen was not felt (poor coöperation). The fingers showed early clubbing. There were three or four petechiae below the clavicles and one questionable one on the soft palate.

The amount of urine was normal when recorded; specific gravity 1.032 to 1.014, the slightest possible trace to a trace of albumin at four of thirteen examinations; sediment showed rare to many leucocytes at all examinations, rare red blood corpuscles at the last two. Blood: 7,200—13,400—4,600—14,100 leucocytes, 86 to 79 per cent. polynuclears, hemoglobin 65 to 45 per cent., reds 4,200,000 to 2,672,000; smears showed slight variation in size and shape, slight to marked increase in platelets in three of six smears; one of four smears showed phagocytes, one with red blood cell inclusion, several with large vacuoles. Wassermann negative. Two blood cultures showed streptococcus.

X-ray showed a few calcified glands in each hilus, but the periphery and apices of the chest appeared clear. The outline of the diaphragm was normal on both sides. The costophrenic angles were clear. No definite evidence of pulmonary pathology. Cardiac shadow increased in size in the region of the left auricle and the pulmonary artery.

The temperature was septic throughout, 97.8°-104.1°, the pulse 75 to 160, the respiration 14 (morphia) to 36.

May 25 new petechiae had appeared on the hands. During the next week she continued to show petechiae and a general upward trend of the chart. June 12 she complained of reddish vision and blurring in the left eye. Fundus examination revealed small embolic petechiae. Two days later she was aphasic and irrational. There were increased reflexes and sustained clonus of the right leg. June 21 she complained of pain in the left upper quadrant aggravated by breathing. There was marked tenderness in the region. The signs in the right arm and leg persisted. There was considerable ataxia in the right arm. June 24 there was more blurring of vision. She showed considerable aphasia at times. Nevertheless the whole tendency of the chart was toward improvement. Her general condition also seemed to be improving. Another fundus examination showed two old hemorrhages in the right eye. The disc outlines were a little hazy and emboli were occasionally present, July 4 in one eyelid and the uvula. Two days later she was mentally much confused, with motor aphasia. The temperature and pulse were elevated. Petechiae were found almost daily. At times she was mentally clear, at other times much confused. She had frequent sharp pleuritic pains and irritating cough, not relieved by codeia. The bowels were very constipated and did not respond to cathartics. June 30 she could not void and required catheterization. August 11 there were many very small petechiae showered all over the backs of the hands and arms, on the face and mucous membranes. August 13 there was coupling of the heart sounds. Râles were heard well up in the chest anteriorly. That day she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

1. We have no reason to suppose her appendicitis was the cause of the loss of weight.

2. Here is a patient who has lost weight, who has had cough, pain in the chest, double phlebitis, transitory aphasia. The things in my mind are in the first place tuberculosis, which will not account for the aphasia but might go along with an aphasia due to other cause. I do not know the cause of that aphasia, and I cannot think of anything until we get more facts. Phlebitis we generally do not know the cause of, so we do not need to look much further for that.

3. There generally is tympany in the lower left axilla—that is where the stomach comes—unless they mean that it went up to the top of the axilla. Tympany at the top would be queer; tympany at the bottom is what we expect. Dullness to flatness at the left base of course is abnormal. At that left base we think of fluid, pleurisy, or possibly of adhesions, or of a very big spleen pushing the diaphragm up so that we get dullness where there ought to be resonance.

4. Dr. Holmes will speak for himself about these X-rays, but my guess is that he will say there is not anything wrong on the basis of the facts here given.

5. Murmurs which replace the first sound are more important, more likely to mean heart disease, than those that do not replace it.

6. "Suppression of the acute arthritis" is a pretty good effect, I think. What they mean is that it did *not* affect the heart. I do not think salicylates ever do affect the heart, so it does not surprise me that they did not in this case.

7. I have no idea what these attacks of rapid respiration, pulse, and fever were. The night sweats make us think more of tuberculosis, but they can come from any other cause of chronic fever.

8. We have been watching for the red spots which now appear. I do not believe those were hemorrhages. I do not know what they were.

At the end of the history I am thinking of course of the possibility of acute endocarditis and the possibility of tuberculosis.

NOTES ON THE PHYSICAL EXAMINATION

1. The lung examination means nothing. If these observations had been made on the left we might have thought something of them.

2. The relation to the midclavicular line is not recorded, so we do not know whether the heart dullness is increased or not.

3. There is nothing in the urine that I can see.

4. The blood shows a real anemia and a polynuclear leucocytosis before we get through.

5. With the positive blood culture it is all over. I should say we now have all the facts.

DR. HOLMES: The early plates I have not because they were taken at another hospital. The only thing of importance is the statement that the heart shadow was slightly enlarged at that time. I do not know how accurate that is, but I think it is fair to assume that there was some enlargement. This plate is not taken with special reference to the chest, and we have no fluoroscopic note. The thing of greatest interest is the prominence of the heart shadow to the left. There is also a rather prominent curve in the region of the right auricle, and a distinct prominence in the region of the left ventricle. So it is enlarged in all its diameters, but most across its base in the region of the auricles, and particularly in the left auricle. Such a condition we are in the habit of interpreting as mitral disease, and if this shadow is especially prominent, as mitral stenosis.

DR. CABOT: Has this patient mitral stenosis?

DR. HOLMES: I think she has both mitral stenosis and regurgitation. That is going quite a long way for X-ray.

DR. CABOT: I have so far been skeptical about the possibility of X-ray helping us in diagnosis. This is the sort of case where it may. I had not made that diagnosis yet.

6. Her reddish vision and blurring in the left eye was probably embolism of the retina. There is something going wrong in the brain due to emboli thrown up there presumably from the heart valves.

7. The left upper quadrant is the region of the spleen. Splenic infarcts are very common. There may well be a splenic infarct. We get tenderness when the capsule of the spleen is stretched by an infarct.

8. "The signs in the left arm and leg persisted"—that is, the brain signs.

9. The pleuritic pains and cough were very possibly from pleuritic infarct.

DIFFERENTIAL DIAGNOSIS

I do not see how we can have any question as to diagnosis. It is the same we made in Case 12291*, only streptococcus instead of staphylococcus sepsis, presumably streptococcus viridans. The only question is, where in the heart was the lesion? That is of some interest to me on account of what Dr. Holmes has just said.

Let us go back over the heart data: A short rough late systolic murmur at the apex, an accentuated pulmonic second sound. That is all we have, and I am inclined to say that if I had not seen that X-ray I should not have made a diagnosis of mitral disease. Therefore if it turns out to be mitral disease the X-ray will have shown its usefulness. I should have said aortic rather than mitral disease, for although there is no diastolic murmur there is a "swish" which is presumably the same as a murmur. The chief interest is therefore whether Dr. Richardson finds mitral stenosis. My guess is that he will, but my guess is on the basis of the X-ray plate. He ought to find a splenic infarct, though it does not make the slightest practical difference in the world. We do not know whether it was a big spleen, but she had tenderness and pain there.

The head was not examined, so we will not speculate about the brain. But we might have gone on to the question as to whether there was or was not an abscess there, whether there was or was not an infarction of the brain with softening. We do not always find them in these cases in the post mortem, even when they ought to be there.

Essential diagnosis: subacute bacterial endocarditis, streptococcus viridans, presumably mitral, very possibly aortic also, and the effects of that in the various organs.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Subacute bacterial endocarditis.
Infarction.
Rheumatic heart disease.

DR. RICHARD C. CABOT'S DIAGNOSIS

Subacute bacterial endocarditis, mitral (and aortic?).
Infarct of the spleen.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Chronic and acute endocarditis, mitral valve.

2. *Secondary or terminal lesions*

Mural thrombi, left ventricle.
Focal degeneration and necrosis of the myocardium.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Infarcts of the spleen and kidneys.
Localized acute peritonitis.
Acute pericarditis.
Decubitus.

*Published July 22, 1926.

3. *Historical landmarks*

Scar of operation wound, appendectomy.

DR. RICHARDSON: The lesion in this case was of the mitral valve, and the other valves were negative.

The gastro-intestinal tract and the lungs showed passive congestion and nothing else.

The pericardium however contained 200 cubic centimeters of thin purulent fluid material, and the visceral and parietal layers were coated with fibrin,—an acute pericarditis. The heart weighed 303 grams, a little large for her, and moderately dilated. The mitral valve was a little decreased in circumference, and along the margin there was some chronic endocarditis, fibrous and nodular. The chordae tendineae were thickened and beaded in places with minute masses of vegetations. In addition to that and on it as a base there was a large mass of soft brownish vegetations. So we have here two processes, chronic and acute, with some decrease in the circumference of the valve and a choking of the valve by the acute mass,—two things choking the valve, the fibrous, chronic endocarditis, slight comparatively, and the acute mass which choked it considerably. That mass was four centimeters by one and a half by one centimeter. The aorta and the other great vessels were negative.

The liver showed passive congestion. The spleen weighed 250 grams, slightly enlarged. Here is rather a curiosity. We have had two or three cases of the kind. At one point in the spleen an infarct. The embolus of course came down the splenic artery from that soft mass on the mitral valve. The infarct softens, becomes purulent, an abscess. Then the process extends to the peritoneum; in this particular case it extended to the peritoneum and there was a localized area of peritonitis. In other words, peritonitis may be due to endocarditis.

There were infarcts in each kidney.

In addition in this case there was a curious condition. On the endocardium of the left ventricle there was a thrombotic plaque, extending off from that a thrombotic streamer, and from the streamer a small ball-like thrombotic mass that must have bobbed about in the blood stream.

CASE 12302

A CASE OF NEGLECTED HERNIA

SURGICAL DEPARTMENT

An unmarried hotel maid thirty-six years old came to the Emergency Ward June 20. Five days before admission she was seized in the morning with nausea and vomiting. Since that time she had had frequent nausea and vomiting, which had now become stercoraceous. She had been unable to keep anything on her stomach and had had no movement of the bowels in spite of repeated enemas and mild cathartics. Frequently after vomiting she had had sharp pains in the abdomen. On the first day a hernia in the left groin of two years' duration came down while she was vomiting and had remained down. Her physician sent word that her temperature had at no time been above normal.

Her family history was not obtained. Her past history was negative except for the hernia mentioned, which had previously always been reducible, and an operation for removal of the left ovary and the appendix three years before admission.

Examination showed a well nourished woman. The thyroid was palpable but not enlarged. The abdomen was distended and tympanitic. There was no marked tenderness. There was an irreducible left femoral hernia the size of an egg, not tender. The rest of the clinical examination showed nothing of importance.

The amount of urine was 12 to 90 ounces; urine cloudy at seven of nine examinations, alkaline at five, specific gravity 1.010 to 1.017, a slight trace to the slightest possible trace of albumin at five, sugar at the first, acetone and diacetic acid at four; sediment, a few to rare leucocytes at four examinations, red blood cells at three. Blood, leucocytes 20,600. Stool tarry, macroscopic blood, guaiac strongly positive.

Before operation the temperature, pulse and respiration were not recorded.

PRE-OPERATIVE DISCUSSION

BY GEORGE A. LELAND, M.D.

At the time of admission the diagnosis was quite obvious. There was a firm irreducible left femoral hernia about the size of a hen's egg. Vomiting of five days duration and of a character which indicated that it had been regurgitated from farther and farther down the intestinal tract could leave no one in doubt as to the probable pathology. Furthermore the patient presented hot-water bag burns over the abdomen. This was important as a possible indication of the amount of pain which the patient had been suffering.

The main question in this case was how best to relieve the obstruction without causing shock in a patient already dehydrated and depleted by five days of vomiting. Choice of anesthetic, operative procedure to be undertaken, and duration of exposure of abdominal viscera were points to be very carefully considered.

PRE-OPERATIVE DIAGNOSIS

Strangulated left femoral hernia.

OPERATION JUNE 20

Spinal procain. The femoral hernia was approached and relieved through the inguinal

route. The hernia was repaired by suture of the conjoined tendon to the pectineal fascia. The round ligament was displaced. A median incision was made through the diastasis of the old suprapubic wound. A gangrenous coil of intestine which had been strangulated in the hernial sac was identified and resected. An attempt to expel the intestinal contents through a Monk's tube was unsuccessful on account of old adhesions. The intestine was punctured in two places in attempting this, thus necessitating further resection. Two Mixter tubes to cut ends.

PATHOLOGICAL REPORT

Two loops of small intestine measuring 18 and 21 cm. respectively. They have purplish red surfaces with thick walls. There are no ulcers.

Infarction.

POST-OPERATIVE DISCUSSION

The intraspinal cocain anesthesia was adequate for the operation so far as it involved the left inguinal femoral region. When, however, the suprapubic incision was made and traction placed upon the mesentery of the small intestine by manipulation, it was necessary to resort to gas-oxygen. Although enterostomy at the site of the femoral hernia would have relieved the obstruction more quickly and obviated the necessity of the second incision, such a procedure is usually unwise in view of the possibility of subsequent digestion of the abdominal wall in the vicinity of Poupart's ligament and the large vessels. The evacuation of the intestinal contents by means of the Monk tube is undoubtedly of great value in cases where there has been any prolonged degree of obstruction. In such cases the distention of the small bowel is apt to be so great that very slight trauma would easily perforate the walls. This proved to be the situation in this case and, as indicated, the old adhesions from the previous laparotomy rendered it impossible to thread the bowel on the Monk tube without trauma.

Following operation the patient's general condition gradually improved, as body fluids were increased by repeated subpectoral salines. On the second day after operation a pint of fluid was given every three hours by the lower enterostomy stoma, alternating between 10% glucose, tap water, and sodium bicarbonate solution. Eight days after operation the abdominal wall showed a considerable degree of irritation and digestion. This was relieved to some extent by the application of compound tincture of benzoin, zinc stearate powder, and zinc oxide ointment. The condition of the adjacent skin was far from normal, however, when the second operation was performed.

ADDITIONAL HISTORY

The patient was in poor condition after the operation, and was still very ill two days later. June 24 one tube came out and was replaced. The drainage became less and less. June 28 the wound showed irritation. During the next two days the patient showed considerable improvement. An attempt was made at clearing the secretion with a suction pump, but the material was too thick.

July 6 a second operation was done.

PRE-OPERATIVE DIAGNOSIS

Intestinal obstruction.

OPERATION JULY 6

Ileostomy opening freed. Adjacent coils of intestine found adherent, with intermesenteric abscesses. Intestines freed proximally and distally until healthy gut was obtained. Intervening section (over two feet) resected. End-to-end anastomosis with silk. Inner layer continuous, outer interrupted. Mesentery whipped over with continuous catgut. Drain to site of anastomosis.

PATHOLOGICAL REPORT

About 71 cm. of ileum the peritoneal surface of which shows rough purplish red areas. There is no ulceration of the mucosa.

Microscopic examination shows the wall and the mucosa infiltrated with a cellular granulation tissue. No lesions can be found in the mucous membrane.

Chronic inflammation.

The patient was in marked post-operative shock. After the transfusion of 600 c.c. of blood she came back very well, and next day was in very good condition. She was given four hour subpectorals of salt solution. July 11 and 15 the dressing looked fecal. On the 13th day, however, the temperature was down and the patient was feeling better. The bowels were moving by rectum. By the 17th the wound was much cleaner and was only a small sinus into the abdominal cavity. She continued to make good improvement. By the 30th there was only slight drainage. August 1 she was discharged.

POST-OPERATIVE DISCUSSION

The anesthesia was nitrous oxide for induction and ether for maintenance. There were multiple stitch abscesses found in the edges of the recent abdominal incision. The enterostomy openings were freed with difficulty on account of the old as well as the new intra-abdominal adhesions. Many intermesenteric abscesses were found, necessitating resection of over two feet of gut. Although the operative procedure required only one hour the patient was in too poor a condition to permit closure of the abdom-

inal wound in layers. A wick was placed to the anastomosis on account of the infection wound in the mesentery.

Post-operatively the wound healed quite expeditiously, although on one occasion the discharge from the wound resembled fecal material. The immediate convalescence was greatly aided by blood transfusion. In this case it was felt that by this means the patient's resistance to infection was definitely improved. Within four weeks, however, the patient left the hospital with a hernial wound well healed and solid but with an abdominal wound well healed and weak.

DIAGNOSIS

Intestinal obstruction due to strangulated femoral hernia.

CASE 12303

AN ABDOMINAL EMERGENCY ARISING AFTER OPERATION

SURGICAL DEPARTMENT

A boy whose earlier history was given as Case 11083, published February 19, 1925, entered the hospital for the fourth time May 30, ten months after his last discharge.

Since the three operations for traumatic cyst of the pancreas discussed by Dr. Porter in the previously published report the boy had been feeling well except for one day when he had to stay in bed because of abdominal pain. He was now twelve years old.

Two days before admission he began to have generalized dull lower abdominal pain moving all over the abdomen and associated with vomiting of everything taken by mouth. Since the onset his bowels had not moved. He belched very little gas. He had some headache.

Examination showed a fairly well developed and nourished boy, somewhat restless, complaining a good deal and calling for water, but not feverish. The clinical examination was negative except for generalized tenderness over the abdomen and in the flanks and some voluntary spasm. Rectal examination showed generalized tenderness on both sides.

Before operation the urine specimen was insufficient for specific gravity test. The sediment showed occasional leucocytes. There were no other abnormalities in the urine. The blood is not recorded.

The temperature was 96.5° to 99.5°, the pulse 70 to 140.

PRE-OPERATIVE DISCUSSION

BY GEORGE A. LELAND, M.D.

On the day of admission the symptoms and signs were consistent either with an acute appendicitis pointing to the left side of the abdomen or with intestinal obstruction. Enema produced gas but very little fecal result. Water taken by mouth was not vomited.

On the following day the chart showed a rise in pulse but no corresponding rise in temperature. The abdomen was slightly more distended. There was less gas by enema. There was no vomiting.

PRE-OPERATIVE DIAGNOSIS

Intestinal obstruction.

OPERATION MAY 31

Ethylene. On opening the abdomen through a right rectus muscle splitting incision in the lower quadrant there was an escape of a pint or more of bloody fluid under considerable tension. The appendix was found without evidence of inflammation. Upon exploration a coil of gangrenous small intestine was found in the left lower quadrant of the abdomen bound down by thin recent adhesions. This coil was delivered from the wound. The gangrene was found to be due to a volvulus, the volvulus apparently due to adhesions from the left upper quadrant to the distal arm of the gut. The intestine above the volvulus was thickened and reddened, the intestine below very thick. The mesentery was ligated and Mixter tubes were placed in both stomas of the intestine. The wound was closed over rapidly by through and through sutures.

PATHOLOGICAL REPORT

A section of small intestine 29 cm. long. It has a purplish red surface with necrotic walls.

Infarction.

During the first twenty-four hours following the operation one tube drained about twenty ounces of dark brown fluid. The other drained practically nothing. There was no vomiting until the afternoon and evening of June 2, when he vomited three times. Fluids were now stopped. Both tubes were irrigated and some drainage started but soon stopped. He looked well in spite of vomiting and rapid pulse. Two days later he was distinctly better. There was no vomiting. The tube was draining profusely. He was having bowel movements and passing gas. June 5 the tubes were out. June 6 the general condition was good, but the wound had broken down extensively, apparently because of tension. There was profuse drainage. The wound was strapped. June 8 the chart was normal. He was taking fluids freely without vomiting. June 9 extensive erosion of the wound from what apparently was digestion appeared. Zinc oxide paste was applied liberally but did not seem to help much. Suction with a tube in the bowel was tried. Though fecal discharge caused frequent obstruction, several hundred cubic centimeters of material was sucked out.

The boy was obviously losing weight. The wound digestion seemed to go no further. June 11 he was started on glucose and saline in the distal bowel stoma and took it very well. June 12 he vomited once for the first time in several days. June 14 he was having semisolid bowel movements through the wound. The suction was stopped. June 15 the skin of the abdominal wall became very red and tender, as if digesting. The suction was used again and the skin protected with zinc oxide paste. The chart continued to be normal. The wound cavity seemed to be granulating. He was evidently absorbing the bowel feedings of peptonized protein in glucose and saline, as he had no spontaneous bowel movements by rectum. Very soft solids were given by mouth. The non-protein nitrogen was 30 milligrams. He made steady improvement. June 22 charcoal taken by mouth appeared in the wound in thirty-five minutes and was all out in two hours. He was given a constipating diet to see if the excretion could be slowed down. It produced no material change. Attempts were made to have him swallow a string to measure approximately the position of the former obstruction. After several unsuccessful attempts he was finally able to swallow the string without vomiting, but when it appeared at the enterostomy opening it was wound up into several coils so that no estimate was possible as to the length of the small intestine from the stomach to the enterostomy. The skin about the wound was very red and tender. The wound was granulating in rapidly. The general condition improved gradually. By July 1 the dermatitis had reached the dorsum of the penis. Dressing had to be done every two hours. He complained of burning micturition. The condition of the wound and the abdomen improved. July 10 he had a natural bowel movement.

Further Discussion

Prior to operation the patient showed evidence of dehydration. Although there had been no vomiting, the intake of water by mouth was very limited and the amount of glucose given subpectorally was not sufficient to maintain his fluid equilibrium.

Accordingly ethylene anesthesia was chosen in preference to ether. During induction there was regurgitation of gastric contents of less than one ounce. Within two minutes of induction the patient became unconscious and sufficiently relaxed to permit incision. The anesthesia lasted for an hour and fifteen minutes and was completely satisfactory from both the point of view of the surgeon and the condition of the patient. The ethylene anesthesia was reinforced by three ounces of ether just before and during the closure of the abdominal wound. The anesthesia was maintained for only a minute after the operation closed. The patient began to regain consciousness almost immediately, and within two minutes of the closure of the abdominal wound had regurgitated about a pint of brownish intestinal fluid content.

I feel that the method of anesthesia in this case was of great importance. The rapidity of induction, the satisfactory maintenance throughout the operation and the avoidance of gastric reflexes until after the completion of the operation contributed a great deal, and may have been the deciding factors in the outcome of this case.

Further History

July 14 a second operation was done. He did very well after it, had no vomiting and only occasional slight abdominal pain. There was very little discharge. The bowels were moved only by enemata for the first week. Subsequently one dram of milk of magnesia and half an ounce of mineral oil three times a day were adequate to promote daily evacuation. August 2 he was discharged.

Further Discussion

At the end of six weeks after operation the general condition of the patient and the local condition of the wound seemed to have improved sufficiently to permit an operation for anastomosis. Up to that time the distal stoma had been used solely for the introduction of nutritional fluids. At this time the patient was given castor oil through the distal stoma to make certain that the lower portion of the intestinal tract was entirely free and also to stimulate peristaltic action in preparation of normal intestinal contents following anastomosis.

Pre-operative Diagnosis

Enterostomy following operation for intestinal obstruction.

Operation July 14

Ethylene and oxygen. The old abdominal wound on each side and surrounding the enterostomy was excised, disclosing as far as possible the normal layers of skin, fascia, muscle and peritoneum. The enterostomy was freed from its adhesions to the abdominal wall and about an inch resected from both ends. There was fresh bleeding. Anastomosis was performed, approximating the bowel end-to-end and using interrupted silk sutures. The mesentery was then stitched to close in the aperture consequent upon the overlapping. It was then found that a section of the small intestine had been torn in freeing the adhesions from the abdominal wall. This was sutured similarly. After the suture the lumen appeared to be narrow. Accordingly a pie-shaped section of intestine was removed

at this point and end-to-end suture performed. In this instance there was no division of the mesentery. The wound was closed in layers without drainage.

Further Discussion

After the intestinal stomata were freed from the abdominal wall a search for other possible intestinal openings was made but none found until after the intestinal anastomosis was completed. If the lacerated small intestine which was subsequently found had been discovered prior to the anastomosis the time of the operation could have been saved by a larger resection of the intestine to include both the stomata and the laceration. The prolongation of the anesthesia necessary for the second intestinal suture did not, however, prove to be of any detriment. The anesthetic used in the second operation was again ethylene combined with oxygen and a few inhalations of ether during induction. The patient's condition was excellent throughout. and accordingly time was taken to close the wound very carefully in layers, thus prolonging the total anesthesia to two hours and twenty-three minutes. During this time the patient's pulse ranged from 120 down to 100 and up to 148 at the close of the operation.

The post-operative convalescence was essentially uneventful. The slight discharge from the wound apparently involved the skin and subcutaneous layers only and was of no material consequence.

DIAGNOSIS

Intestinal obstruction due to volvulus of the small intestine.

CHARACTER READING AND WATER SUPPLY

These two dissimilar subjects have one thing in common. You cannot usually tell a person's character simply by looking at him nor can you tell a safe water simply by looking at it. The only way to tell about either is to look into it more closely.

At this time of year, this is particularly a good point to bear in mind when you may be traveling away from your native haunts but the same facts hold true in regard to your home surroundings.

Remember first the fact already mentioned that a fine appearing and tasting water may be unsafe, and second, that a sewage contaminated water may be used for years without producing disease until the sewage from a typhoid carrier takes part in the pollution. This is the time when the "I told you so" of the doctor or health official is too late to save the victim from his sick bed.

ROADSIDE WATER SUPPLIES

Private supplies or sources used by the roadside traveler are usually secured from wells, springs and running streams. The only sure method of telling whether or not water from a well or spring is safe is to analyze the water but many unsafe water supplies can be ruled out by inspection. Wells should be located away from cesspools, privies, manure piles, etc., and should not be on a slope from them. The curbing and cover of the well should be tight and waste water should preferably be diverted away. Bucket and chain wells are rapidy becoming obsolete because of the dangers from unclean hands of diseased persons.

Springs should be constructed with tight housing to avoid surface contamination. Dipping of utensils presents danger to the bucket well and an overflow pipe should be provided and used. Springs also should be located away from polluting influences.

Running streams without the benefit of long storage or purification are always potentially dangerous. Picnickers, hunters or other visitors may deposit excreta on the watershed of the stream so that pollution may wash in. No protection exists for you.

Turbid waters should be avoided because they suggest the probability of surface wash. All water from running pipes by the roadside should be followed up to the source for most of these are not safe for drinking purposes.

You have become accustomed to "Stop, look and listen" before crossing railroad tracks. Become accustomed to the same habit before using private water supplies. They may be just as dangerous.—*Bulletin Connecticut State Department of Health.*

CLINICAL CONGRESS OF THE CONNECTICUT STATE MEDICAL SOCIETY

This Congress is scheduled to meet the three days of next September 21-23. This is the second meeting of this Congress and is not a meeting of the State Medical Society but a postgraduate assembly arranged by the physicians of Connecticut and neighboring states, working in harmony with the State Society.

The attendance last year was well over three hundred and it is expected that a larger number will be present.

Practical papers will be submitted. One evening will be given over to the subject of periodic health examinations and one to a smoker. Registrants are charged a fee of ten dollars which will cover the cost of printed abstracts, the smoker and luncheons and garage or parking fees.

The Secretary of the Congress is Milton C. Winternitz, Dean of the Yale Medical School.

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AGAIN, THE COST OF PRIVATE MEDICAL CARE

IN a recent issue of this JOURNAL*, comment was made upon the cost of private medical practice as investigated in the County of Kings, New York. In the joint report of the medical society of this county and the Committee on Dispensary Development of the United Hospital Fund of New York, it is stated that "it seems safe to say that a family of five in this city requires an income of $2,200 to $3,000, according to their standard of living, for the necessaries of life, without allowance for the care of health beyond a small outlay for minor illnesses." According to the statistics of the New York State Housing Commission, two-thirds of the families of New York City have incomes under $2,500. The estimated ability of a family of four or five members with an annual income of $2500 to pay for the care of health, including doctor, dentist, nursing, medicine, and so forth, would not be over $100 in a year. That so large a proportion of the community can afford to spend so little for medical care is a fact deserving serious consideration.

Physicians as a class are not economists; they are highly developed individualists, examining intently one case at a time. The larger aspects of medical practice they too often ignore. It is well for the medical profession to look aside occasionally from the actual management of sick people, and to consider the relation of their profession to the community as a whole. Such a survey is suggested by the report referred to above; the doctors of every large city may well ask themselves what will be the ultimate result of a situation in which two-thirds of the population can afford to pay only for minor illnesses.

It is true that the aggregate sum of many small fees may run into large figures. If the nine families in which there was no illness would contribute to the medical care of the tenth family in which sickness existed, or if each family would save a fair sum every year to pay for medical services when sickness came, the solution would be easy. But to expect that is to be disappointed, for it is only human nature, encouraged by present day standards of living, for most families to spend to the limit while they have the money, and to enjoy every possible luxury while they have their health.

Whenever serious illness overtakes them, they must look to charity, either through the medium of a hospital, or through the kindness of a physician more skilful than the one they usually employ. In either case, this aid is made possible by the contributions of that third of the population which is more well-to-do. The hospital is supported by the taxes or contributions of wealthy individuals; the surgeon or specialist whose aid they solicit is supported by the fees of these same people.

The situation is not so very different from that which obtains in other lines, such as education, fire and police protection and government. The economist may say that the fortunes of the rich are based upon profits made by selling goods to the poor, or by exploitation of the laboring class. If this is so, and no doubt to some extent it is true, the people to whom we say we give charity are really in a roundabout way contributing to our support. Be that as it may, the percentage of families who cannot afford to pay directly for their medical care is increasing. Every dollar that can be spared from the purchase of necessities is spent for radios, automobiles and other luxuries. If sickness comes, the doors of the great hospitals swing easily; their staffs are composed of the best internists, the most famous surgeons. The more time these same doctors spend at the hospital, the higher have to be the fees which they charge for extramural work. How far can this process extend before it cracks?

The most likely remedy, as we see it, consists in hospitals charging moderate fees to all who can pay, and from these fees reimbursing the staff. This departure has already been made in some institutions, and their example, we pre-

*July 8, 1926, page 102.

dict, will be followed by more. Since in hospital practice a physician's time is conserved, so that he can see many more patients than he can see privately, he can afford to treat hospital patients at less per man that he can treat private patients. Patients will have the benefit of the best advice without asking for charity, yet without having to pay impossible fees.

We should not be surprised to see some enterprising hospital inaugurate a sort of insurance scheme, whereby a family, by payment of a certain sum annually, could be assured of care for its members in case of illness.

Changes in the science of economics may come more slowly than the revolutionary changes of physics and chemistry, but they will take place whenever a system becomes inadequate. It may still be many years before the cost of private medical care becomes too great for the great majority of the population to meet, but when that time comes, other ways of providing medical services will have to be forthcoming. It is well for our profession to keep a weather eye on the horizon, and not to be caught entirely unawares when the storm bursts.

BULLETIN OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

THE month of July brings to our desk the first issue of the new Bulletin of the Association of American Medical Colleges, a quarterly publication newly reorganized under the editorship of Dr. Fred C. Zapffe. A previous attempt at publishing a quarterly bulletin devoted to the dissemination of news of interest to medical colleges was made by the Association fifteen years ago, but this was forced to discontinue after two years of existence, due to lack of funds. Four years ago it was again voted to publish a bulletin, but no funds were provided until, at the meeting of the Association in Charleston in October, 1925, the annual membership dues were increased to $100 per year for this purpose.

This bulletin, according to the introductory editorial, will be devoted wholly to furthering medical education and to serve as a medium for disseminating views on medical pedagogy. In it teachers in medicine will find a means through which to bring to their fellows new methods of teaching on which discussion is sought. These functions will be served as well as that of the publication of all news regarding medical schools and their personnels. The first issue makes an auspicious beginning with articles on the premedical course by Hugh Cabot and Samuel P. Capen, Chancellor of the University of Buffalo; the neurological study unit in the Yale University School of Medicine, by H. S. Burr, Associate Professor of Anatomy; the program of the University of Illinois College of Medicine, by David J. Davis, Dean of the College, and modern educational methods and their relation to medical education, by E. Stanley Ryerson, Secretary of the Faculty of Medicine of the University of Toronto.

From every side, in this restless day, we are bombarded with discussions and criticisms of medical education. We are too scientific in our teaching; we educate the rich man at the expense of the poor; our teachers are investigators rather than pedagogues; the art of practice is being lost sight of in the stampede for the hidden riches of research. No matter what the complaint is, dissatisfaction seems general and the criticisms bewildering. Many of these complaints must have a basis; many of them are the idle vaporings of the chronic critics.

One thing seems certain; dissatisfaction there is, and this bulletin should provide a valuable means for the exchange of ideas that must help towards a better understanding of the problems, and perhaps an eventual clearing of the atmosphere.

ANNUAL REPORT OF THE BOSTON PSYCHOPATHIC HOSPITAL

THIS report comprises the activities of the Hospital for the year ending November 30, 1925. The report of the director discusses in detail the co-ordination of the various departments, the role of the executive staff and the organization of the clinical work, including the study and treatment of patients and their nursing care, occupational therapy, recreation and the social service activities. To the latter, a special section is devoted. Without going into the details of this document, it might be well to point out several prominent features.

For instance, the members of the executive staff to a large extent interpret the function of a hospital for mental diseases to relatives and to those voluntarily seeking admission as patients, for the purpose of creating a modern outlook on mental disorders in order to offset the mediaeval and misleading conception of various types of mental diseases. This is a very important activity and should comprise one of the prominent tasks in any propaganda of mental hygiene.

There has also been an attempt in certain types of borderland cases to study the variations of behavior in different environments. The outstanding social problems of patients are frequently brought to the attention of the clinical staff, such as tangled domestic situations, unsatisfactory social life, economic trials, inner disharmonies and various types of delinquency. It is interesting, too, to note the attitude towards the so-called intelligence tests in which it is pointed out that a serious danger lies in their uncritical utilization, and a mere determination of what constitutes general intelli-

gence without reviewing the special mental functions of the individual in dealing with some of the problems of life.

Other problems under investigation in this report from both the clinical and purely laboratory standpoints have been studies of the blood sugar in the emotional disturbances of various cases, the out-patient activities in dealing with psycho-neuroses, the increasing importance of psycho-therapy, and finally the results of the malarial treatment of paresis.

Only a few of the outstanding features of this report have been indicated in order to show how varied are the activities of a modern hospital for mental diseases.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

PRATT, JOSEPH H., Ph.B.; A.M.; M.D. Johns Hopkins 1898; Member Association of American Physicians, Consulting Physician to the Brockton Hospital and Chelsea Memorial Hospital. His subject is "Dilution and Concentration Tests of Renal Function," page 203. Address: 370 Commonwealth Ave., Boston.

COUES, WM. PEARCE, M.D. Harvard Medical School 1894; F.A.C.S.; Surgeon to Out Patients, Mass. General Hospital; Assistant Surgeon, Boston Dispensary; Instructor in Surgery, Tufts College Medical School. His subject is "Laennec, The Man—1781-1826," page 208. Address: 12 Monmouth Court, Brookline, Mass.

MORRISON, HYMAN, A.B.; M.D. Harvard Medical School 1908; Assistant in Medicine, Harvard Medical School; Physican to Out Patients, Massachusetts General Hospital; Visiting Physician, Beth Israel Hospital. His subject is "Laennec's Clinico-Pathological Studies," page 211. His address is 483 Beacon St., Boston.

VIETS, HENRY R., B.S.; M.D. Harvard Medical School 1916; Assistant Neurologist, Massachusetts General Hospital; Instructor in Neurology, Harvard Medical School; Member, American Neurological Association, Boston Society Psychiatry and Neurology and the American Psychiatric Society. His subject is "Some Editions of Laennec's Work on Mediate Auscultation," page 213. Address: 14 Charlesgate West, Boston.

BALDWIN, J. F., A.B.; A.M.; M.D. Jefferson Medical College, Philadelphia 1874; F.A.C.S.; Formerly Professor of Physiology and Anatomy, Columbus Medical College and formerly Professor of Surgery, Gynecology and Chancellor, Ohio State University Department of Medicine. His subject is "Relation of the Colon to Abdominal Tumors," page 217. Address: Columbus, Ohio.

VAN HOOK, WELLER, M.D. University of Illinois College of Medicine 1885; Formerly Professor of Surgery at Northwestern University Medical School and member of the Staff. His subject is "Introducing Solutions Subcutaneously," page 219. His address is 31 State St., Chicago, Illinois.

HUBER, EDWARD G., A.B.; M.D.; Dr.P.H.; Major in Medical Corps, U. S. A. His article on "The Control of Communicable Diseases Prevalent in Massachusetts with a Study of Mortality Due to Them During the Past Seventy-Five Years" is continued on page 220. Address: War Department, Washington, D. C.

MYERSON, ABRAHAM, M.D. Tufts College Medical School 1908; Professor of Neurology, Tufts College Medical School; Visiting Neurologist, Boston City Hospital and Beth Israel Hospital; Psychiatrist, Massachusetts Commission Mental Diseases, and Consulting Neurologist, Boston Psychopathic Hospital. He writes on "Progress in Neurology—1925," page 225. Address: 483 Beacon St., Boston.

MISCELLANY

PLANS DESIGNED TO REDUCE ACCIDENTS IN INDUSTRY

THE Industrial Accident Prevention Conference, Washington, D. C., has been devoting considerable attention to the possibilities of reducing accidents in industrial occupations. To this end it has been proposed that a national museum of safety be created in Washington in which the perils of industry are to be illustrated together with such devices as may help to prevent accidents.

In addition to the humanitarian features of such efforts, the financial losses to manufacturers and insurance companies resulting from accident should prompt investigators to use every possible means which may convey information to the employers of labor, giving information with respect to all reasonable safety appliances and methods.

There will always be careless workmen who need to be saved from thoughtless exposure to the perils of many occupations.

The saving of life, the prevention of suffering and economic demands should stimulate the most intensive study of the dangers which exist. Much good should result from this conference.

REUNION OF THE HARVARD MEDICAL SCHOOL CLASS OF 1901

THE Harvard Medical School Class of 1901 held its 25th Anniversary Celebration on June 22 and the following program was enthusiastically completed:

9:30 A. M.—Meeting at Harvard Club in

Boston for registration and welcome by Committee.

10:30 A. M.—Left by motor cars for visits to Medical School and Hospitals.

1 P. M.—Luncheon at Harvard Club.

2:30 P. M.—Start for Winchester Country Club in automobiles.

3 P. M.—Golf, tennis and baseball at the Country Club.

6:30 P. M.—Visited the estate of Dr. Gale at Winchester.

7 P. M.—Class Dinner at Country Club.

At the luncheon Prof. Emeritus F. C. Shattuck, Prof. Emeritus Geo. G. Sears, Prof. Emeritus Chas. M. Green, Dr. Franz L. F. E. Pfaff, Dr. Frank B. Mallory and Mr. Thomas Bonney were the guests. The after dinner remarks of Drs. Shattuck, Green and Mallory were thoroughly enjoyed and carried the thoughts of all to that happy and interesting four years spent together at Harvard Medical School. Dr. Shattuck contrasted the clinical lectures of a quarter of a century ago with those of the present time, illuminating the story with appropriate and happy verbal illustrations as was his custom in former years, and which made such lasting impressions on his students.

Dr. Green responded in his usual happy manner and congratulated the Class of 1901 on the excellent record it had written into the medical history of United States since graduation.

Dr. Mallory mentioned the prominent place in medical science into which Pathology was moving and quoted the numerous important positions in this country now filled by pathologists whose training was received in Boston.

The weather proved ideal for all the events scheduled, the reunion was a success and one long to be remembered.

Following the dinner, several of the members responded to toasts and instrumental music and singing ensued.

These physicians were present:

Nathaniel Allison, Boston; Horace Binney, Boston; Leslie R. Bragg, Webster; Nathaniel P. Breed, Lynn; J. Lewis Bremer, Boston; Benjamin T. Burley, Worcester; J. Forrest Burnham, Lawrence; Thos. E. Caulfield, Woburn; Arthur A. Chase, Plainfield, Conn.; David Cheever, Boston; Harold Cholerton, Somerville; Morton E. Cummings, Malden; John H. Cunningham, Boston; Arthur H. Davison, Boston; Richard Dutton, Wakefield; Wm. G. Dwinell, Providence, R. I.; Albert Evans, Boston; Martin T. Field, Salem; Harold A. Gale, Winchester; Henry M. Grady, Dedham; Chas. E. Hawkes, Providence, R. I.; P. William Hess, Providence, R. I.; Frank J. Jones, Providence, R. I.; Arthur L. Kennedy, Denver, Colo.; Charles L. Knight, Boston; Gustave E. Kurth, Lawrence; Chrysostom J. Leary, New Bedford; Frederic T. Lewis, Boston; Edwin A. Locke. Boston; Frank R. Mahoney, Lowell; Nathaniel R. Mason, Boston; Orland S. Mahew, Vineyard Haven; Sam'l J. McDonald, Boston; Walter F. Nolan, Boston; Ralph B. Ober, Springfield; Joseph C. O'Connell, Providence, R. I.; Richard J. O'Shea, Spokane, Wash.; Frederic H. Packard, Waverley; Herbert B. Priest, Ayer; Frederick M. Robertson, Bristol, N. H.; George P. Sanborn, Boston; James W. Sever, Boston; Lincoln F. Sise, Boston; Frank W. Sleeper, Dorchester; Frederick L. Taylor, Roxbury; Peter H. Thompson, Boston; Charles H. Tozier, Boston; Wallis D. Walker, Portsmouth, N. H.; Fred P. Webster, Portland, Me.; Nathaniel K. Wood, Boston; and Alfred M. Wose, Syracuse, N. Y.

41ST MEETING OF THE CONFERENCE OF STATE AND PROVINCIAL HEALTH AUTHORITIES OF NORTH AMERICA 1926

Report of Committee on Relations Between Medical Men and Health Officers

MATTHIAS NICOLL, JR., M.D., CHAIRMAN, ALBANY, NEW YORK

With the extension of the field of public health activity and the recognition by the public and governmental officials of the value and influence of an efficient and popular administration of the public health, it is not surprising that a certain amount of friction and some misunderstanding should arise between state and local health administrations on the one hand and medical practitioners on the other, although there is no logical basis for this condition of affairs. While it is true that public health work has been responsible to a greater or less extent for reducing greatly the incidence of certain infectious diseases, notably typhoid fever, diphtheria, tuberculosis, and the conditions which give rise to infant mortality, which formerly constituted a considerable part of private practice, nevertheless, when official campaigns have been properly and efficiently conducted against these diseases, the result has invariably been such an increased interest, on the part of the public and the medical profession, that medical practice has not suffered but has actually increased.

On the other hand, there is little question that the medical profession has had just cause for grievance against those public health officials, who, taking advantage of their legal prerogatives, have ridden rough-shod over practitioners of medicine in the furtherance of this or that plan of public health work, often ill-considered and ruthlessly carried out, totally without regard to the rights and privileges of the medical profession and not infrequently of the public.

The opinion which is sometimes voiced, that the practice of preventive medicine is a prerogative solely of public health officials, is entirely

fallacious. It would be most fortunate for the public health if all of those physicians engaged in private practice or research work, who possess a knowledge of preventive medicine equal and often vastly superior to that of the average public health official, could be included in the official ranks of public health. Every effort should be made to obtain the coöperation of such men and all deference shown to their opinion. The future of the medical profession, as has been so frequently pointed out, lies in the field of preventive medicine. Medical schools are tardily recognizing this fact and in some instances reorganizing their curricula to the end that the teaching and practice of preventive medicine may be emphasized and no longer considered, as it has been, a somewhat minor specialty. The medical profession itself has awakened to the situation and, in a number of states and of their own initiative or in coöperation with the health authorities and medical schools, inaugurated postgraduate courses dealing especially with the early recognition and prevention of disease. The popularity and large attendance on these courses are ample evidence of their need. Granted that the knowledge of the primary essentials of preventive medicine is, through no fault of their own, far from what it should be among medical practitioners, let any ambitious health officer visualize the situation in which he would find himself if the majority of practicing physicians should be eliminated from his jurisdiction and he should undertake, even through a greatly enlarged field staff, to administer the public health without their aid. The physician, whether engaged in official public health work or in private practice, is morally obligated to uphold the public health and, in so far as he fails to discharge that olbigation, the people must suffer and grow indifferent to the requirements of the public health law.

While the support and coöperation of the medical profession are absolutely essential to the successful conduct of official public health work, it does not follow that public health officials should obtain that support through the abrogation of any official prerogative, nor should it be necessary so to do. The vast majority of the medical profession will be found to be sympathetic with sane and efficient public health work, and there is something lacking in the character of a health administrator who is unable to obtain such sympathy. It is not to be expected that every medical practitioner will coöperate in a public health program. The medical profession, like every other profession, contains its due share of reactionaries and narrow-minded individuals who may well be disregarded, even though they constitute a somewhat noisy minority.

In the matter of new legislation, the conduct of a new and far-reaching health campaign and in the formulation of untried policies, it is highly desirable that the medical profession and health authorities should arrive at a definite understanding. Perfect agreement cannot always be reached as regards minor details, but, in most instances, general principles can be laid down to which both parties are willing to subscribe. Unless the state is to assume the responsibility for all matters affecting personal and public health—a condition of affairs which is unthinkable—coöperation and mutual respect between public health officials and the medical profession are absolutely essential to any material progress.

Important Notice

The Conference by resolution ordered the Secretary to send a copy of this report to the Speaker of the House of Delegates of the American Medical Association for reference to the Delegates and to send copies to all Canadian and State Medical Journals for republication, after requesting the Journal of the A. M. A. to publish the report and to make reprints for distribution by State and Provincial Health Officers. Please order by return mail the number of reprints you desire to purchase at cost through the Secretary, Dr. A. J. Chesley, c-o State Department of Health, Old Capitol, St. Paul, Minn.

AMERICAN PSYCHIATRIC ASSOCIATION

The Committee on the Legal Aspects of Psychiatry of the American Psychiatric Association, has recently submitted to the Association its corrected final report, the main points of which are summarized in the official statement of position, printed below:

Official Statement of Position

We believe—

(1) *That* the psychiatrist's chief concern is with the understanding and evaluating of the social and individual factors entering into failures in human life adaptations.

(2) *That* crime is a designation for one group of such adaptation failures, and hence falls definitely within the focus of psychiatry, not excluding, of course, certain other branches of science.

(3) *That* crime as well as other behavior and characterologic aberrancies can be scientifically studied, interpreted and controlled.

(4) *That* this study includes a consideration of the hereditary, physical, chemical, biological, social and psychological factors entering into the personality concerned throughout his life as well as (merely) in the specific "criminal" situation.

(5) *That* from a study of such data we are enabled in many cases to direct an attack upon one or more of the factors found to be active in a specific case to effect an alteration of the behavior in a propitious direction; while in other cases where this is not possible we are able in the light of past experience and discovered laws to foresee the probabilities to a degree sufficient to make possible proper provision against subsequent (further) injuries to society. By the same experience and laws we are enabled

in still other cases to detect and endeavor to prevent the development of potential criminality.

(6) *That* these studies can be made with proficiency only by those properly qualified, i. e., scientists who have made it their life interest and study to understand and treat behavior disorders.

(7) *That* this point of view requires certain radical changes in legal procedure and legislative enactment, insuring the following provisions:

(a) The court appointment, from a qualified list, of the psychiatrists testifying in regard to the mental status, mechanisms, or capabilities of a prisoner; with opportunity for thorough psychiatric examination using such aids as psychiatrists customarily use in practice, clinics, hospitals, etc.; with obligatory written reports, and remuneration from public funds.

(b) The elimination of the use of the hypotheti cal question and the terms "insane" and "insanity," "lunacy," etc.

(c) The exemption of the psychiatrist from the necessity of pronouncing upon intangible concepts of religious and legal tradition in which he has no interest, concern or experience, such as "responsibility," "punishment" and "justice."

(d) The development of machinery adequate to the requirements of the psychiatric point of view in criminal trials and hearings, including court clinics and psychiatrists, and ultimately a routine compulsory psychiatric examination of all offenders with latitude and authority in the recommendations made to the court as to the disposition and treatment of the prisoner.

(8) *That* this also entails certain radical changes in penal practice, including:

(a) The substitution of the idea of treatment, painful or otherwise, for the idea of retributive punishment.

(b) The release of prisoners upon parole or discharge only after complete and competent psychiatric examination with findings favorable for successful rehabilitation, to which end the desirability of resident psychiatrists in all penal institutions is obvious.

(c) The permanent legal detention of the incurably inadequate, incompetent, and antisocial, irrespective of the particular offense committed.

(d) The development of the assets of this permanently custodial group to the point of maximum usefulness within the prison milieu, industrializing those amenable to supervised employment, and applying their legitimate earnings to the reimbursement of the state for their care and maintenance, to the support of their dependent relatives, and to the reimbursement of the parties injured by their criminal activities.

(9) *That* effective preventive medicine is applicable in the field of psychiatry in the form of mental health conferences and examinations, child guidance clinics, mental hygiene clinics, lectures and literature, and similar institutions and efforts.

(10) *That* the protection outlined provide an efficient and scientific solution to the problems of crime, viz.:

(a) The protection of society.

(b) The rehabilitation of the "criminal" if possible.

(c) His safe and useful disposition or detention if rehabilitation is impossible.

(d) The detection and the prevention or deflection of the development of criminality in those potentially predisposed.

Respectfully submitted,

ADLER KIEB
BRIGGS LOWREY
GLUECK SALMON
HEALY WILLIAMS
JELLIFFE WHITE
MENNINGER

THE PRESIDENT OF THE MAINE MEDICAL ASSOCIATION

LESTER PIERPONT GERRISH, born Lisbon, Maine, 1875; educated Nichols Latin School, Lewiston, Maine, and Bates College, 1896; graduated Harvard Medical School 1904; Boston City Hospital, 1906.

LESTER PIERPONT GERRISH,
President of the Maine Medical Association.

Has practiced general medicine in Lisbon Falls, Maine; has served as Representative in the Maine Legislature, 1921 and 1922; has served as Chairman of Legislative Committee of Maine Medical Association for last six years.

NEW ENGLAND SURGICAL SOCIETY

TENTATIVE SCIENTIFIC PROGRAM FOR ANNUAL MEETING, OCTOBER 1 AND 2, 1926

1. Obscure Lesions of the Shoulder, Dr. E. A. Codman, Boston.
2. Life Saving Details, Dr. Frederick B. Sweet, Springfield.
3. The Operative Treatment of Fractures, Dr. Charles L. Scudder, Boston.
4. Amputation of the Thigh, Dr. P. E. Truesdale, Fall River.
5. Staphylococcus Abscess of Spine, Dr. Kendall Emerson, Worcester.
6. Title not yet announced, Dr. F. H. Lahey, Boston.

EVENING SESSION

7. Diabetes and Its Relation to Surgery, Dr. Elliott P. Joslin, Boston.

8. Pyloric Stenosis, Dr. W. E. Ladd, Boston.
9. Carcinoma of the Stomach, Dr. Edward R. Lampson, Hartford, Conn.
10. Acute Massive Hemorrhage from Peptic Ulcer, Dr. David Cheever, Boston.
11. The Mortality Rate of Appendicitis—Is It on the Increase? Dr. Arthur W. Marsh, Worcester.
12. Fibromatosis of Sigmoid, Dr. Peer P. Johnson, Beverly.
13. Caesarean Section After Death of the Mother—Report of Two Cases, Dr. M. J. Fallon, Worcester.

RECENT DEATHS

CORCORAN—Dr. Luke Corcoran, 79, for 56 years a practising physician in Springfield, chairman of the board of trustees of the Northampton State Hospital, and oldest director of the Springfield Safe Deposit and Trust Company, died in his home in Springfield July 19, 1926. He was on the staff of the Springfield Hospital, a director of the Springfield Library Association for many years, and a director of the Connecticut Valley Historical Society.

Dr. Corcoran was born June 17, 1847, in St. Alphonse, Joliette County, Quebec, Canada, and came to Springfield when he was 18 years old. He was graduated from the Medical Department of New York University in the class of 1868. He married Harriett Porter Brewer of Springfield in 1874. He leaves a son, James Brewer Corcoran, well known as a writer of books for boys.

PUTNEY—Dr. George Ellis Putney, a former Fellow of the Massachusetts Medical Society, died at his home in Paynesville, Minn., June 23, 1926.

He was a graduate of Harvard Medical School in the class of 1876, practised in Reading, Mass., where he was medical examiner for Middlesex County, moved to Royalton, Minn., in 1887, resigned from the Massachusetts Medical Society, and for the last 35 years had maintained a private hospital at Paynesville and practised surgery. He was a native of Rhode Island, was a house officer of the Boston City Hospital, the Massachusetts State Hospital and the Massachusetts State Infirmary at Tewksbury. He was 80 years old, and is survived by his wife, who was Miss Arietta M. Davis, and by a married daughter.

INGRAHAM—Dr. Lena Vaughn Ingraham, formerly surgeon to the Vincent Memorial Hospital, Roxbury, and to the Trinity Dispensary in the West End of Boston, died at her home in Cambridge, July 16, 1926.

She was born in Thompsonville, N. Y., and was graduated from the Women's Medical College, Philadelphia, in 1883, settling in Boston and joining the State medical society in 1887.

She was one of the senior surgeons in charge of the Vincent Hospital from 1890 until 1898, and it was on her suggestion that the girls of Mrs. Quincy Shaw's School (where she taught physiology) and a few others that the Vincent Club, to aid the work of the hospital, was formed. This was in 1892, at a meeting held at the home of Miss Lucy Derby (the late Mrs. S. R. Fuller), who became deeply interested in Dr. Ingraham's plan. Officers were elected and plans for work were discussed, under the able leadership of Dr. Ingraham.

Dr. Ingraham had been identified for several years with the Sargent School for Physical Education in Cambridge, where she had been instructor in anatomy and hygiene and had thus become well known personally to a large number of girls who have been students there, and to whom she had greatly endeared herself. Her counsel as a member of the administration board was of value to the school.

OBITUARY

DR. HENRY FOX HEWES

Dr. Henry Fox Hewes was one of the most unobtrusive of men. Quietly he went his way through Harvard College and Medical School and his internship at the Massachusetts General Hospital. For some years after he started practice he did general medical practice and taught clinical laboratory methods at the Harvard Medical School. From the beginning gastro-intestinal disturbances commanded his interest and during the last 10 years of his life he confined his work entirely, both in the Massachusetts General Hospital and in his private practice, to that specialty. Dr. Hewes was at his best in dealing with the individual private patient. He would not tolerate an assistant to take his histories for him. He had no use for forms, labor-saving devices, etc. To a very large extent he did his own laboratory work. When he finished with a patient he ordinarily wrote out directions for the patient in his own hand and usually wrote to the doctor a full letter also in his own hand. All this he did on principle because he believed in the close contact between the patient and physician. From his wealth of experience Dr. Hewes usually arrived at the correct diagnosis in a simple, direct fashion. He laid perhaps the most stress upon a careful history. With the diagnosis attained he gave a few very simple directions. He had none of the frills and none of the excessive jargon of many of the specialists in his field. He rarely found it necessary to use the more elaborate diagnostic methods. Everything seemed very simple, perhaps too simple both to the physicians and the patients, but Dr. Hewes did not indulge in the various artifices and subterfuges to catch the popular eye. It would have been very easy for Dr. Hewes to have exploited his position as a specialist in gastroenterology. Such a procedure was extremely distasteful to him. I believe that Dr. Hewes never increased his charges to his patients during his professional career. His modest consultation fees have often been the source of embarrassment to other consultants who have been called in on the same case.

It is in keeping with his character that Dr. Hewes did not publish much, and did not take a prominent part in medical meetings. It is extremely unfortunate that in passing of Dr. Hewes there is lost a wealth of experience concerning gastro-intestinal disturbances, which,

probably, is not duplicated in this community.

Although he was a sick man for two years Dr. Hewes worked along quietly, sparingly, but effectively. His last illness, a massive cerebral hemorrhage, came quite abruptly with merely the warning that he did not feel equal to seeing patients that day. Dr. Hewes died young, in his 59th year, leaving behind a widow, Margaret Warman Hewes, and an only child, Henry Fox Hewes, Jr.

CORRESPONDENCE

THE APPOINTMENT OF MR. GORDON HUTCHINS AS A MEMBER OF THE PUBLIC HEALTH COUNCIL

Department of Public Health
State House, Boston

July 15, 1926.

Editor, Boston Medical and Surgical Journal:

May I announce through your columns the recent appointment by the Governor and Council of Mr. Gordon Hutchins, a farmer, of Concord, as a member of the Public Health Council of this Department, to replace Mr. Warren C. Jewett of Worcester, recently deceased.

With four of the other five members of the Council physicians it seems wise that a layman should be appointed to the sixth position. Although Massachusetts is essentially an urban State there are large areas and a considerable population that is rural. In such communities the approach to the various health problems is frequently considerably modified over what it is in an urban community. Also in regard to domestic animals, nuisances, moist lands and other sanitary problems the rural point of view must be represented, particularly because of our very active interest in milk legislation, and we are fortunate in having a practical farmer with a sense of community responsibility who can advise us. This is another example of the phenomenon which has perhaps been as conspicuous in Massachusetts as in any of the States; namely, that the Commonwealth has a large group of citizens of quality on whom it can call for practically unremunerative service.

Yours truly,

GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

IS COD LIVER OIL NECESSARY FOR THE NORMAL INFANT?

Editor, Boston Medical and Surgical Journal:

This question, which was raised by Dr. L. W. Hill in the columns of Correspondence of the issue of the BOSTON MEDICAL AND SURGICAL JOURNAL of June 24, 1926, is just what many of us have been waiting for. It should help to bring forth a wider discussion on the subject by men who have had experience in feeding babies.

Dr. Hill in making his statements has combined good common sense with his wide and practical experience and one cannot help but agree with everything he says.

At the North End Clinic, where most of the infants that are brought for feeding are Italian babies, I have often noted how some will show unmistakable rickets in spite of prolonged and systematic feeding with cod liver oil.

It is not only the laity who insist on "forcing it down the innocent gullet of every inoffensive baby," as Dr. Hill says, but also our younger pediatricians, who also wish to make us believe that it must be given to every baby. Is it not more logical to use it in those cases as Dr. Hill suggests?

I have found the yolk of egg mixed ni the milk when given to bottle-fed babies very efficient, not only as a preventive of rickets but also as a builder of healthy, firm tissues. It is best to begin at the age of about 3 or 4 months, starting with ¼ or ½ yolk in 24 hours and gradually increasing it to one yolk in 24 hours.

MAX STURNICK.

12 Columbia Road, Dorchester.

NOTES FROM THE NATIONAL CAPITAL

(From Our Washington Correspondent)

MATERNITY AND INFANCY BILL BLOCKED AGAIN

House Bill 7555, to extend the operation of the Federal Maternity and Infancy Act for another two years, came up in the Senate on June 15, but no action was arrived at, as debate automatically ceased at 2 o'clock, when a co-operative marketing bill had to be considered. Dilatory tactics were employed by several Senators who are opposed to the bill, a roll call being demanded, and acrid speeches being made by Senator Reed, who has always been a violent opponent of this measure, and others. Senator Reed asserted that the maternity and infancy law has never saved a human life, a statement which was challenged by Senator Copeland, who said that Mr. Reed was not in a position to know. Senator Reed retorted that he supposed the general medical adviser of all the people of the United States, at so much per advice, probably knows. Mr. Reed then remarked that "this organization has been nothing but a common and public nuisance, maintained at the expense of the people of the United States." Other Senators rushed to the defense of the bill with statements of health authorities and others as to its benefits, but the time expired before action could be taken.

HEARINGS ON MILK IMPORTATION BILL

Boston health officials testified in opposition to the bill (H. R. 11768) to regulate imported milk, before the Committee on Agriculture of the House of Representatives on June 8. This measure, sponsored by Representative Taber of New York, would prohibit the importation into the United States of milk or cream not from tuberculosis free herds. It fixes a minimum sanitary score for dairies at 70 points out of 100, and puts the maximum allowance of bacteria for raw milk at 200,000 per cubic centimeter and for pasteurized milk at 100,000. Allowable bacteria in cream would be 750,000 per cubic centimeter for raw and 500,000 for pasteurized. The bill also provides for inspection and licensing of dairies by the Department of Agriculture. All of these requirements are perfectly reasonable from the standpoint of public health.

Charles F. Redmond, representing the Mayor of Boston; Dr. Robert E. Dyer, of the dairy division of the Boston Health Department, and Cornelius A. Parker, attorney for the Cream Dealers' Association of New England, united in opposing the general principles of the bill. They contended that such legislation would impair the city's milk supply, much of which comes from Canadian sources, unless sufficient time were given Canadian dairymen to comply with the proposed standards. It was also asserted that the requirements were higher than Boston considered necessary.

Representative Tincher suggested that if Boston depended upon Canada for milk, when farmers of the Western United States had a surplus, the bill ought to be passed at once. That there was such a surplus was declared by Charles Holman, secretary of the National Milk Producers' Association, which, naturally, favors the bill.

The measure was reported favorably to the House on June 9, the day after these interesting hearings.

CONFERENCE ON OIL POLLUTION

The first international conference on oil pollution of navigable waters opened in Washington on June 8. Twelve nations, including Belgium, Great Britain, Denmark, France, Germany, Italy, Japan, Netherlands, Norway, Spain, Sweden and the United States, were represented. This matter of oil pollution is, of course, a serious problem for States and cities bordering on the sea, for the oil is not only detrimental to property but is a menace to public health by discouraging the use of shores and beaches for recreation. The pollution comes chiefly from ships which discharge oil in coastal waters. The measures suggested to prevent such pollution are: Prohibition of oil dumping at sea; prohibition of oil discharge within a certain distance of the shore; utilization or separation of the oil by suitable devices aboard ship. On the advisory committee to the American government is G. W. Field, Ph.D., of the Massachusetts Fish and Game Protective Association, who, however, represents the National Conference on Outdoor Recreation at the conference.

LEGISLATION OF INTEREST TO PHYSICIANS

The bill to pay for blood transfusions in government hospitals was favorably reported to the House on June 2.

Senator Copeland has introduced a bill (S. 4441) to regulate the practice of medicine and midwifery in the District of Columbia, the medical practice laws of which now leave something to be desired.

Chiropractors had a hearing before a subcommittee of the Senate Committee on the District of Columbia on June 9, regarding a bill to regulate chiropractic in the District. Representatives of the local medical society advocated a practice act creating a composite examining board upon which all schools of healing would be represented, but the chiros were adamant for a separate board. The health officer of Washington, D. C., opposed the bill. No action had been taken by the subcommittee, of which Senator Copeland is chairman, up to the middle of June.

Hospitalization for persons discharged from the Navy or Marine Corps, who have contracted tuberculosis in line of duty, would be provided by a bill (H. R. 12708) introduced on June 8 by Representative Magee of Pennsylvania.

Congress will probably adjourn by the end of June. After this adjournment a brief review of medical and public health legislation considered (or ignored) by Congress will be given in these notes.

REDUCING SOAP DEBARRED FROM MAILS

The Postoffice Department has a system whereby patent remedies and questionable medical preparations are investigated and if found fraudulent are denied the use of the mails. Such a fraud order was issued on June 9 against the La Mar Laboratories of Cleveland, which was marketing a soap guaranteed to wash away fat and years of age. This preposterous remedy was said to be effective in cases of double chin, large hips or busts, prominent abdomen, etc. The postal authorities did not think so, however, and the 200 letters which the firm was said to be receiving daily will henceforth not be delivered, and the use of the mails is forever denied to this particular scheme for the attainment of youth and grace.

MISCELLANEOUS ITEMS

The Superintendent of Documents, Washington, D. C., has issued the 16th edition of the List of Health Publications. It contains the titles of some 1300 government pamphlets on various phases of health, issued by many different federal bureaus. This list alone is one of the best arguments for the correlation of federal health work.

A book entitled "The National Government and Public Health" will be issued in the near future by the Institute for Government Research of Washington, D. C. The Institute also has in preparation a monograph on the Medical Department of the Army. The author of both of these books is James A. Tobey.

The Surgeon-General of the Army has accepted the offer of the Prohibition Agent of Tampa, Fla., of 40 barrels of rye whisky captured off the coast of Florida, and said to test "120 proof," whatever that means. This liquor will, of course, be used only for medicinal purposes. The acceptance was announced by the War Department on June 12.

Interesting experiments on dengue fever, carried on by Army surgeons in the Philippines, have recently been announced. Seventy-seven American soldiers voluntarily submitted to the bite of infected mosquitoes and 47 came down with dengue fever as a result. This disease is prevalent in our Southwestern States, where it causes great economic losses, though few fatalities. The experiments proved that the disease is spread by a mosquito of the genus *aedes*, another member of which, the *aegypti*, carries yellow fever.

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING JULY 10, 1926

Diphtheria	13	Dysentery, bacillary	1
Last week	7	Encephalitis, epidemic	1
Diphtheria bacilli carriers	3	German measles	13
Whooping cough	23	Influenza	2
Last week	17	Malaria	2
Typhoid fever	7	Mumps	2
Last week	4	Pneumonia, lobar	18
Scarlet fever	39	Tetanus	2
Last week	46	Tuberculosis, pulmonary	17
Measles	148	Tuberculosis, other forms	1
Last week	153	Gonorrhea	6
Bronchopneumonia	20	Syphilis	6
Chickenpox	47		
Conjunctivitis, infectious	2		

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEKS ENDING JULY 10 AND 17, 1926

	Weeks ending July 10	July 17
Anterior poliomyelitis	2	5
Chickenpox	113	77
Diphtheria	45	35
Dog-bite	8	8
Encephalitis lethargica	2	2
Epidemic cerebrospinal meningitis	1	—
German measles	86	37
Gonorrhea	28	218
Influenza	3	—
Malaria	—	1
Measles	274	208
Mumps	53	73
Ophthalmia neonatorum	40	37
Pellagra	—	2
Pneumonia, lobar	40	34
Scarlet fever	187	110
Septic sore throat	4	1
Suppurative conjunctivitis	8	—
Syphilis	12	64
Tetanus	2	3
Trachoma	1	—

Trichinosis	—	1
Tuberculosis, pulmonary	98	133
Tuberculosis, other forms	19	20
Tuberculosis, hilum	10	6
Typhoid fever	8	11
Whooping cough	139	156

NOTICES

AMERICAN BOARD OF OTOLARYNGOLOGY

The next examination given by the American Board of Otolaryngology will be held in Denver, Colo., at the University Hospital, on Monday, September 13, 1926. Application should be made to the secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the United States Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C.	August 9, 1926
At Chicago, Ill.	August 9, 1926
At New Orleans, La.	August 9, 1926
At San Francisco, Calif.	August 9, 1926

Candidates must be not less than 23 nor more than 32 years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, United States Public Health Service, Washington, D. C.

S. B. Grubbs, *Acting Surgeon-General.*

REPORTS AND NOTICES OF MEETINGS

BOSTON MEDICAL HISTORY CLUB

The annual meeting was held at the Boston Medical Library, May 10th, 1926. Dr. J. W. Courtney presided. The report of the nominating committee, consisting of Drs. Painter, Coues and Bartol, was received and the following members of the Club were unanimously elected for the year 1926-1927:

President—Dr. Fred B. Lund.
Vice-President—Dr. E. W. Taylor.
Secretary-Treasurer—Dr. Henry R. Viets.
Curator—Mr. James F. Ballard.
Councilors—Drs. John W. Farlow, F. T. Lewis and George Sarton.

Dr. W. P. Coues read a paper on "The Life and Works of Laennec," which appears elsewhere in this issue of the Boston Medical and Surgical Journal.

Dr. Wm. H. Robey spoke on "The Clinical Importance of Auscultation." He told the story of Laennec's first conceiving the idea of auscultation by watching some boys at play in the garden of the Louvre. One boy scratched with a pin on the end of a hollow beam and the sound was easily transmitted to the other end. The next day, Laennec tried the effect of listening to the heart action in one of his patients through a roll of paper held to his ear. He later used stiffer paper and, still later, devised the wooden stethoscope. Dr. Robey then outlined the arguments used against the stethoscope during the early years of its existence. He thought that Laennec was familiar with Auenbrugger's work on "Percussion."

Dr. Robey read extracts from Laennec's book, pointing out Laennec's ideas on central pneumonia, the differential diagnosis between fluid and pus in the pleural cavities, and the various heart sounds, of which Laennec thought the first to be due to ventricular contraction and the second to auricular contraction. Laennec described four important sounds: "the bellows," "the rasp," "the new leather sound" and "the purring tremor," and also noticed the crepitation of fractured bones as heard by the stethoscope.

Dr. Robey showed a number of varieties of early stethoscopes: (1) Dr. Jackson's stethoscope brought over from France by Dr. Jackson and a good example of a true Laennec stethoscope; (2) another longer one, probably devised for students; (3) another similar stethoscope; (4) the German type, given to Dr. Robey by Dr. Robert Edes; (5) an early example of a bi-aural stethoscope; and (6) the type of stethoscope used by Dr. Robey when a student at the Harvard Medical School.

Dr. V. Y. Bowditch also showed a number of stethoscopes, one of which came directly from Laennec and another used by Dr. Jacobs Bigelow. The latter was referred to by Dr. O. W. Holmes in his poem "The Stethoscope Song" (1849). Dr. Henry Jackson spoke of the disregard of the stethoscope in Germany when he was a student there (1885 and 1886) They only had the metal ones and he never saw a bi-aural stethoscope.

Dr. Hyman Morrison spoke on "The Other Works of Laennec," and Dr. Henry R. Viets described the various editions of Laennec's work on "Mediate Auscultation." Both of these papers are to be found in this issue.

Dr. John Fulton showed his French edition of Laennec's work on auscultation with the signature of Laennec on the fly-leaf, presenting the book to his uncle.

Dr. Harvey Cushing spoke of Kipling's description of Laennec in "Rewards and Fairies" and read extracts from it.

PLYMOUTH DISTRICT MEDICAL SOCIETY MARKS 75 YEARS OF ACTIVITY

DESPITE the inclement weather, nearly 50 members of the Plymouth District Medical Society, accompanied by their wives and friends made the trip July 15, 1926, to Nantasket, where the 75th anniversary meeting was held at the Atlantic House. There was a brief but appropriate program that included an historical sketch of the organization.

The opening remarks were by Dr. J. S. Stone, president of the Massachusetts Medical Society, who stressed the importance of all medical societies working for certain legislative measures soon to be introduced.

Dr. Alfred C. Smith, president of the society and toastmaster, later named a legislative committee of 12 members to attend sessions of the House and Senate whenever possible in the interest of these bills.

Dr. E. H. Bigelow of Framingham gave an interesting address on "Progress in Medicine," covering the period from 1851 to the present time. Dr. Nathaniel K. Noyes of Duxbury read the historical sketch of the society.

The first meeting of the society was held at the King house in Abington, May 27, 1851, at 10 o'clock in the morning. The meeting was organized by calling Dr. Ezekiel Thaxter to the chair and Dr. Winslow Warren was appointed clerk. This body was organized by informal vote and these officers were elected by ballot: Dr. Paul L. Nichols, president; Dr. Winslow Warren, secretary; Dr. Alfred C. Garratt, treasurer and Dr. J. M. Underwood, librarian.

The early records of the society state that, "after listening to some very appropriate remarks by the president-elect and partaking of a sumptuous dinner, and again to remarks by several gentlemen, it was resolved to adjourn, to meet again at the same time and place on Nov. 12, 1851."

Dr. Thaxter, who was the first presiding officer, was an Abington man, having been town clerk from 1821 to 1832. After a useful life, the last three years of which he was inactive by reason of a paralytic stroke, he died, Oct. 11, 1856.

Dr. Nichols, the first president, was born in Cohasset, but passed the greater part of his life as a practitioner in Kingston. He headed the organization from its institution to 1867.

The 11 medical men who affixed their signatures to the first roll, besides those previously mentioned, were Dr. Hector Orr, East Bridgewater; Dr. Winslow Warren, Plymouth; Dr. Alfred C. Garratt, Abington; Dr. Samuel Orr, Bridgewater; Dr. Timothy Gordon, Plymouth; Dr. Benjamin Hubbard, Plymouth; Dr. Josiah S. Hammond, Plympton; Dr. Charles A. King, Abington, and Dr. Francis Collamore, Pembroke.

Through the untiring efforts of several of its members the society has progressed steadily and now numbers 106 members. The presidents dating from Dr. Nichols down to Dr. Wallace C. Keith, who served during 1910-1911, are as follows: Dr. Asa Millet, Dr. Josiah Hammond, Dr. Benjamin Hubbard, Dr. Nelson B. Tanner, Dr. Henry N. Jones, Dr. H. W. Dudley, Dr. W. R. Howes, Dr. B. F. Hastings, Dr. H. F. Borden, Dr. Francis Collamore, Dr. J. B. Brewer, Dr. J. C. Gleason, Dr. A. E. Paine, Dr. J. E. Bacon, Dr. H. F. Copeland, Dr. E. D. Hill, Dr. A. A. MacKeen, Dr. J. H. Averill, Dr. W. P. Chisholm, Dr. F. G. Wheatley, Dr. F. J. Ripley and Dr. W. C. Keith.

Dr. Alfred C. Smith, present president, was for 18 years secretary of the society, relinquishing the duties of that office when he entered the service during the World war. At that time Dr. Wallace C. Keith was chosen as his successor and Dr. L. B. Packard now fills the office.

A GROUP MEETING ARRANGED BY THE MASSACHUSETTS CENTRAL HEALTH COUNCIL

THE Massachusetts Central Health Council held a group of meetings on Tuesday, June 15, at which public and private health agencies were represented. The Conference opened with a luncheon meeting at Hotel Westminster at which Dr. William H. Robey, President of the Council, presided. Dr. Robey gave a talk on the history and purposes of the Council, which was organized six years ago. Dr. Robey stated that the object of the Conference was to bring together the public and private agencies to the end that duplication of effort might be avoided and that the agencies might understand each other's point of view and program of work and that concerted action might be taken on legislative and other matters of common interest.

After the luncheon the meeting was divided into two parts, one being held at the John Hancock Life Insurance Company Auditorium, which was presided over by Dr. George H. Bigelow, State Commissioner of Public Health. Dr. Bigelow spoke on behalf of the State:

"The aim of the State Department of Public Health is to lengthen life and make it more vigorous, to control disease, and to further the utilization of new methods." In characterizing the form taken by this work Dr. Bigelow showed it to be de-centralized. Authority of this form he believes to be wiser in the Commonwealth of Massachusetts where a large degree of local autonomy is the accepted principle, while in countries such as Bulgaria and Roumania a more highly centralized organization is essential for the efficient execution of programs.

Speaking of some of the particular objectives in this general program of the lengthening and invigorating of life, Dr. Bigelow said, "We are

vitally interested in protection from human waste through proper sewage disposal and the safeguarding of water supplies. In this work perhaps the original Board of Health made its most signal contribution."

Further objectives of the Department are the entire field of communicable diseases, which embraces such questions as diagnosis, quarantine, hospitalization, serum therapy, and active immunization; also the field of maternal, infant, child and school hygiene. There is also work to prevent adulteration, although much of this consists in the analysis of "hooch" for the courts. Finally there is the objective of mental hygiene and other comparatively new subjects.

Dr. Bigelow questioned the necessary continuance of present allocations of time and moneys to specific departments. "These," he said, "must be changed from time to time to meet the needs of the community."

John J. McGrath, President of the Massachusetts Association of Boards of Health, said that the work of the organization which he represented was for better coöperation between the various boards, and a uniform enforcement of regulations. The enforcement of much legislation is in the hands of the local authorities.

This association is now undertaking questions of industrial hygiene, dental clinics and physical examinations.

The work and history of the Massachusetts Association of Directors of Public Health Nursing Organizations was outlined by Mrs. Agnes T. Marvin, Secretary. This Association was "organized in 1915 to encourage the development of public health nursing, to promote higher standards, to support proper public health legislation and to strengthen and stimulate the work of existing organizations by interchange of experience."

Mrs. Marvin said that "Of 155 public health nursing associations in Massachusetts 130 are active members of the State Associaton." All but one are private agencies. The speaker believes that the influence of this association has undoubtedly had a part in the establishment of many new Public Health Nursing Associations in the Commonwealth. It has also standardized much of the practice of these associations.

"Dental Hygiene," said Dr. Harold DeWitt Cross, "means the health of the teeth and the body and not alone the cleaning of the teeth. At present the factor of nutrition is considered even more important for dental hygiene than the mere cleansing of teeth."

Dr. Cross is President of the Dental Hygiene Council of Massachusetts. The Council, which was organized in 1907, is for the purpose of educating the public and the establishment of clinics for the poor. The prevention of dental diseases is the focus of their attack, centered on work with the children as one of the greatest preventive tasks.

"It seems to be only an act of ordinary decency to provide some treatment for mental and nervous cases," said Dr. C. Macfie Campbell, President of the Massachusetts Society for Mental Hygiene, in speaking for that Organizaton. "Such work," he says, "pays the community and should be supported for that reason, if for no other."

Dr. Campbell said that the nervous patient receives less adequate care than any other single group, and that human beings cannot be sanely treated merely as machines but must receive treatment as psychological and emotional aspects of individuals unfitted into the social realm of the community. "Mental hygiene," he said, "is like tuberculosis work, an effort to prevent and save and provide for the out-patient."

"It is one method to achieve greater efficiency and a diminution of the political and economic unrest now so prevalent in the world."

The threefold purposes of the Massachusetts Society for Social Hygiene are the conservation of the family, adequate sex education and a reduction of venereal disease, according to Burton L. Hess, Secretary of the Society.

In speaking of the small percentage of college graduates having children, Mr. Hess said, "Those who are zealous for the future of America do well to encourage marriage and children on the part of those best equipped mentally and physically to produce Americans for the future." He likened the subject of eugenics to the registration of well-bred animals. The national pure blood of Jerusalem, Greece, England and America has resulted in such individuals as the early prophets known in the Bible, Socrates and Aristotle, Bacon and Milton, and Emerson, Webster and Longfellow.

The Society has opened the only evening clinic in Boston for the treatment of venereal diseases. This is a model clinic and the youngest one registered in the Commonwealth. The Society is carrying on efforts for a graded sex education through the parents, the adolescents, the colleges and Y. M. C. A.'s.

The problem of tuberculosis, according to Dr. Edward O. Otis, Honorary President of the Massachusetts Tuberculosis League, lies in the years of early adulthood, the years of economic and social value, the early years of family life. At this period tuberculosis is the greatest cause of death in the country.

The work of the League is largely one of advice to the twenty-seven affiliated associations throughout the Commonwealth in carrying out the program to halt the ravages of this disease between the ages of fifteen and forty-five. Much of this work is done through the medium of the Modern Health Crusade in the schools of the state. A special educational secretary is employed for this purpose.

The League, the local associations, and the

National Tuberculosis Association, which renders service to the states similar to that given by the League to its affiliated members, are made possible through the sale of Christmas Seals. In Massachusetts this has jumped from $19,000 in 1911 to the sum of $229,101 in 1925. Much of the work in Massachusetts is made possible through the coöperation with the official agencies.

The other meeting was held at the Hotel Westminster and was presided over by Miss Gertrude W. Peabody, President of the Massachusetts Association of Directors of Public Health Nursing Organizations.

Dr. Roger I. Lee of the Committee on Public Health of the Massachusetts Medical Society, was the first speaker. Dr. Lee stressed the importance of the physician not only being an individualist in medicine but the importance of his participating in public health movements. He also emphasized the growing importance of the understanding of physicians and laity on the subject of health habits.

Dr. Channing C. Simmons spoke on the aims and purposes of the Massachusetts Committee of the American Society for the Control of Cancer. Dr. Simmons stated that, at the present time, there are at least 90,000 deaths annually in the United States from cancer. The American Association is a nation-wide organization with branches in every state. Dr. H. C. Taylor is President and Dr. G. A. Soper is Managing Director. The headquarters of the Society are at 370 Seventh Avenue, New York City. The Society carries on an educational campaign through the distribution of literature, lectures, posters, motion pictures and radio talks. The slogan of the Society is "In Early Treatment Lies the Hope of Cancer."

The educational work of the Society is directed toward the general public, physicians and surgeons. The public is urged to consult a physician early in the case of any suspicious tumor or other symptom that might suggest the presence of cancer. The general practitioners are urged to be on the look-out to recognize the disease in its early stages and advise proper treatment. The surgeons are being instructed to perform suitable operations where cancer is present. In surgery lies the hope of cure in the majority of cases, although treatment by radium, X-ray, diathermy and other similar methods are of use in some instances.

Dr. Henry Jackson represented the New England Heart Association. Dr. Jackson stated that many great men have lived long lives of usefulness in the face of serious heart conditions. It is the great aim of those interested in the Heart Disease Campaign to see that little children who are affected with heart conditions are so interested in their own early childhood that they may always sedulously avoid activities which would increase their heart conditions. He stated that some insurance companies unfairly debar applicants from securing insurance because of heart conditions which are reputed to be serious but, in fact, are not, providing people lead normal lives. Dr. Jackson, who within the past few years has examined hundreds of children in the Boston schools, paid a tribute to the physicians who were doing the school health work. He stated that in his long experience he had found only two children who were timid or reluctant about being examined.

Dr. E. A. Crossman, Inspector in Charge of Tuberculosis Eradication work in Massachusetts for the United States Bureau of Animal Industry, spoke on the importance of veterinary medicine as a part of the general public health program. Dr. Crossman said, "There is slight outward evidence that the general public has any adequate conception of the important fact that veterinarians supervise the health of the animals from which 99% of the human toxins, serums and vaccines are made. Perhaps the most important work the veterinarian in the United States is doing, so far as public health is concerned, is the supervision and inspection of animals and animal food products in the packing-houses. Federal meat inspection is maintained in nine hundred and ten establishments engaged in interstate or export business, in two hundred and fifty-seven cities and towns. Add to this the hundreds of state and city veterinary inspectors, whose duties are similar in smaller slaughter-houses where business is confined to local markets. The Federal meat inspection service of the United States is the largest and most comprehensive meat inspection service in the world. Veterinarians of the United States Department of Agriculture, coöperating with state and private veterinarians, are applying the tuberculin test to more than eight and one-half million cattle annually with a view to eradicate tuberculosis from the dairy herds of America. The Government and the several states working under a plan to establish Tuberculosis-Free Accredited herds will spend fifteen million dollars this coming year."

Robert W. Kelso, Executive Secretary of the Boston Council of Social Agencies, said,

"There are 130 agencies, public and private, in the membership of the Boston Council of Social Agencies. Thirty-five of these are organizations dealing with the public health, either through hospitalizaton, clinical and dispensary service, or health education and the coördination of public health functions.

Of the eight departments or study groups in the Council, two are devoted specifically to problems of health. These are the divisions on Health, comprising the Boston Health League of 33 agencies, and the division on Hospital Social Service, made up of the social service heads of 14 general and special hospitals.

The hospital social workers perform the in-

creasingly important function of readjusting the hospital convalescent into the community. They represent liaison between the hospital bed and the work bench. Their aim is to consolidate the gains made in the hospital process by relocating the patient in the routine of his workaday life without too much strain in physical strength or too much mental distress. Through their division in the Council they discuss problems and methods which they have in common, securing a reasoned conclusion as to the sound program to follow and a higher degree of uniformity in processes which admit of comparison.

The Health League, which serves the Council as its department on Health, is now five years old. It was first organized at the instance of the Metropolitan Chapter of the Red Cross in order to show by a demonstration of complete coöperation what can be done to advance the public health in Boston. Such a demonstration was carried out in East Boston. Sixteen agencies at that time composed the group.

Since the time of the East Boston demonstration the tendency of the League has been to make its meetings serve as a forum for the discussion of plans and policies looking toward a closer integration and an upbuilding of a consistent program of public health education and service for the whole of Boston. That is to say, it functioned genuinely as a part of the Boston Council and in complete accord with Council purposes.

The aims of the League as at that time expressed were:

(a) To promote extension of the work of the Health Department of the City along preventive lines, and

(b) To secure coördination and development of program between the agencies concerned.

The first result of this broader outlook was to take into membership social agencies not thus far attracted. There are now 33 bodies in the League. Ten of these are hospitals or dispensaries. Several are social service departments of hospitals. A few, like Community Health Association, are health services outside the hospitals, and the remainder carry on special health functions or are engaged in the field of public health education.

In support of these aims and purposes the League has secured the coöperation of the George Robert White Fund in the development of health units in the North End, in East Boston and in the South End. The units in the North End and in East Boston are already occupied. These units guarantee the continued effective coöperation of the several public health agencies, public and private, by giving them joint headquarters and joint clinical facilities. The League has for two years carried on health talks in the North End Health Unit. These lectures are addressed to the public health nurses, the physicians, the representatives of the private health agencies and the local public, and are delivered by authorities in their several branches.

The Health League is definitely advancing the growth of a coherent and effective public health program for Boston, making each of its constituents an integral part of that program. It is the most valuable movement of the kind in the field of health that Boston has ever had and as able perhaps as has appeared in any large American city."

At the dinner meeting Dr. George E. Vincent of New York, President of the Rockefeller Foundation, was the only speaker.

BOOK REVIEWS

Diseases of the Chest and the Principles of Physical Diagnosis. By GEORGE W. NORRIS, A.B., M.D., and HENRY R. M. LANDIS, A.B., M.D. W. B. Saunders Company, Philadelphia.

Norris and Landis present the third revised edition of their book on diseases of the chest and principles of physical diagnosis, bringing the whole subject matter thoroughly up to date. With a few exceptions relating to some rare conditions there is nothing new in this third edition. It simply continues the remarkably high standard of excellence which characterized this work from the very beginning. Photographs illustrating physical examination and the pathological plates alone make this work of immense value.

It is an indispensable volume to the library of any internist interested in heart and lung conditions.

Lead Poisoning. By JOSEPH C. AUB, LAWRENCE T. FAIRHALL, A. S. MINOT, and PAUL REZNIKOFF

This is the first really comprehensive study of Plumbism found in the literature. It should present a strong appeal both to the research worker and the purely clinical physician, since it treats quite fully both the theoretical and practical aspects of the problem. While there is much detailed data included, yet this has been presented in such a way that the broad general principles may be readily grasped by those not particularly familiar with this field of investigation. Of particular interest to the clinician are the admirable chapters on the symptomatology and treatment of the condition. In addition, there is included an interesting and instructive chapter on the prevalence of industrial poisoning in the United States by Dr. Alice Hamilton.